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The Institute for National Strategic Studies (INSS) is a major component of the National Defense University (NDU), which operates under the supervision of the President of NDU. It conducts strategic studies for the Secretary of Defense, Chairman of the Joint Chiefs of Staff, and unified commanders in chief; supports national strategic components of NDU academic programs; and provides outreach to other governmental agencies and the broader national security community.

The Publication Directorate of INSS publishes books, monographs, reports, and occasional papers on national security strategy, defense policy, and national military strategy through NDU Press that reflect the output of NDU research and academic programs. In addition, it produces the INSS *Strategic Assessment* and other work approved by the President of NDU, as well as *Joint Force Quarterly*, a professional military journal published for the Chairman.

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EDITOR'S NOTE

The 15ᵗʰ Annual Chairman of the Joint Chiefs of Staff Strategy Essay Competition

The National Defense University (NDU) has conducted the Chairman of the Joint Chiefs of Staff Strategy Essay Competition since 1982. Through this competition students at professional military education institutions are challenged to write original essays about significant aspects of national security strategy. The competition rewards the best contributions with prizes presented through the generosity of the NDU Foundation together with the opportunity for subsequent publication by NDU Press.

Essays by students enrolled in either senior or intermediate service colleges as well as in the constituent colleges of NDU (the Industrial College of the Armed Forces, National War College, and Armed Forces Staff College) are eligible. Essays must be the author's own work and be completed during the academic year. Intermediate college entries are submitted through the respective senior college and count as part of that college's quota.

Competitors may write on any dimension of national security strategy—the political, economic, industrial, psychological, and military instruments of national power as used in war and peace to achieve strategic objectives. Essays with a joint emphasis, including historical contributions, are encouraged.

Senior colleges—working in conjunction with intermediate-level colleges—select no more than eight essays (including the

intermediate college entries) for final competition. On May 21 and 22, 1997, NDU convened a panel of judges in Washington, DC, to evaluate the entries. On June 3, 1997, Vice Admiral Dennis C. Blair, USN, Director of the Joint Staff, on behalf of General John M. Shalikashvili, USA, Chairman of the Joint Chiefs of Staff, presented the awards to the winners of the competition whose essays appear in this volume.

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JOINT VISION 2010

ACCELERATED CUMULATIVE WARFARE

JEFFREY KLINE

WELCOME TO THE NEW STRATEGY LECTURE SERIES!
Today's Lecture:
"Joint Vision 2010: A Route to Accelerated Cumulative Warfare"

THE LECTURE BEGINS

NOISE RISES FROM VARIOUS CONVERSATIONS AS UNIFORMED officers and civilians file into the auditorium. The audience is a broad cross-section of military and diplomatic professionals who are proud of their knowledge and operational expertise in their respective fields. They look forward to hearing the presentation, then providing their own critical analyses of its content. A slightly nervous naval officer stands at the base of the stage watching his contemporaries settle. It is his thesis that would be presented and critiqued. The spirits of classical military strategists are also gathering. They, too, are interested in hearing the presentation.

JEFFREY KLINE

"What!" exclaims the Antoine-Henri Jomini, "A sailor to discuss *military* strategy? I believe we may be wasting our time."

Julian Corbett, English writer of maritime strategy, starts to respond to this challenge but defers when he hears the ancient Chinese warrior-philosopher Sun-Tzu reply, "The source of knowledge is unimportant if it is a relevant truth. We are here to inspire thought, not to judge the meal before eating it. Now silence, the young man begins to speak!"

As the naval officer walks to the stage and the noise dies about the lecture hall, Jomini whispers to the Prussian spirit seated next to him, "Carl, I have real problems understanding that old guy. He always takes such an indirect approach when making a point."

The first slide appears on a wide screen at the center of the stage:

UNDER THE NEW CONDITIONS OF WARFARE, THE *CUMULATIVE* EFFECT OF PARTIAL SUCCESS, OR EVEN MERE THREAT, AT A NUMBER OF POINTS MAY BE GREATER THAN THE EFFECT OF COMPLETE SUCCESS AT ONE POINT.[1]

LIDDELL HART

THERE IS A TYPE OF WARFARE IN WHICH THE ENTIRE PATTERN IS MADE UP OF A COLLECTION OF LESSER ACTIONS, BUT THESE LESSER OR INDIVIDUAL ACTIONS ARE NOT SEQUENTIALLY INTERDEPENDENT. EACH INDIVIDUAL ONE IS NO MORE THAN A SINGLE STATISTIC, AN ISOLATED PLUS OR MINUS, IN ARRIVING AT THE FINAL RESULT.[2]

WYLIE

The speaker begins, "Imagine for a moment a moonless night blanketing a dark, green sea. Silently, a thin black periscope emerges above the surface and locks on its prey. The operator below confirms the target's GPS position through the periscope's laser range finder and nods to his weapons operator. Within moments, a weapon is on its way to destroy the target. The periscope is raised again only to confirm the kill, then the unit relocates to attack another target within its operating area. Fewer

than 15 miles away, in other operating areas, similar engagements occur as allied units strike independently at targets located near their assigned positions."

"Many of you recognize this scenario," continues the lecturer, "as a submarine campaign against surface ships. Admiral Wylie cited this form of warfare as an example of cumulative strategy—a campaign based not on a sequence of engagements leading to a primary objective, but of independent events that have a cumulative effect on the enemy's capability to wage war."

"However, I was NOT describing a submarine campaign. Instead, the sea of dark green was one of vegetation, the units not submarines but light, powerful infantry units operating throughout a battle region. Inserted behind and around enemy lines, these future units are equipped with impressive organic communication, sensor, and weapon capabilities. They are supported by an overarching command and control umbrella and allotted an offshore weapons cache from ships and aircraft. Their job is to establish a sensor mesh in their assigned area,[3] net with the larger command structure, locate and destroy assigned objectives or targets of opportunity, and prevent the enemy's use of their region for maneuver or resupply. Theirs is not to 'occupy' territory, only to prevent the enemy's use of it. As the campaign progresses, and when the opportunity arises, these units could direct their efforts to *massing fires* against a pivotal target as directed by a central coordinating commander."

A second slide flashes on the screen:

THUS THE PINNACLE OF MILITARY DEPLOYMENT APPROACHES THE FORMLESS. IF IT IS FORMLESS, THEN EVEN THE DEEPEST SPY CANNOT DISCERN IT OR THE WISE MAKE PLANS AGAINST IT.[4]

SUN-TZU

"What does the enemy commander see on his situation map? His supply units, ammunition depots, unit command centers,

power stations, communication nodes, radar sites, and front-line troops are being struck throughout his operational area in seemingly random attacks. It is as though the Americans are attacking using massive quantities of special operations forces. He is able to receive reports of attacks, but for some reason is unable to transmit back to his troops. With seemingly incredible speed his map blooms with cancerous reports of independent engagements. The enemy commander searches in vain for a center to strike at the American forces. It is chaos!"

"Interesting start," whispers the English scholar Liddell Hart, to Sun-Tzu, "He certainly has a talent for quoting great thought."

"Maybe," Sun-Tzu replies, "Let us see how he develops his strategy."

THE LECTURE CONTINUES

Formless, cumulative warfare—is this a battlefield with no front, no rear areas, no distinction between tactical and strategic targets, nor sequence of battles? Do the strategists quoted above offer a hint at an evolved offensive strategy founded in new technology? This presentation will explore these questions by describing, in terms of military strategic thought, one possible outcome of the goals and technologies detailed in *Joint Vision 2010*. It will also examine the implications and possible weaknesses of a strategy built on information dominance and precision weapons.

The thesis slide appears:

JOINT VISION 2010—WITH ITS PRIMACY OF INFORMATION DOMINANCE, DOMINANT MANEUVER, AND PRECISION WEAPONS—PLANTS THE SEED OF AN EVOLVED THEORY OF WAR THAT USES COMPLETE ASYMMETRIC FORCE THROUGH "ACCELERATED" CUMULATIVE WARFARE.

By spherically enveloping the enemy with simultaneous strikes throughout the theater of operations, accelerated cumulative warfare maximizes the ability to be inside the enemy's Observation-Orientation-Decision-Action cycle (OODA loop),[5] and achieves victory by breaking military and political will via total disorientation. This concept is not new; evidence of the ability to achieve victory through indirect and cumulative methods may be found in several military theorists' writings. However, with the advent of advanced information technologies to minimize the fog and friction of war, and precision weapons to maximize the effect of single engagements, only now does the ability to achieve victory rapidly with this method of offense seem credible and achievable.

ACCELERATED CUMULATIVE WARFARE DEFINED

CUMULATIVE WARFARE + COMPRESSED TIME FOR EXECUTION ENABLED BY INFORMATION DOMINANCE, PRECISION WEAPONS, DOMINANT MANEUVER AND FOCUSED LOGISTICS = ACCELERATED CUMULATIVE WARFARE!

As previously mentioned, Admiral Wylie, in *Military Strategy*, distinguishes between sequential and cumulative warfare. He cites MacArthur's campaign in the Southwest Pacific and the drive from Normandy to Germany as examples of sequential campaigns. These are actions that rely on a series of discrete steps to achieve their objectives. Conversely, a cumulative strategy is one where no individual engagement is completely dependent on one that proceeds it. The overall result of these individual actions creates a cumulative, or emergent effect on the enemy's ability to conduct war.[6] Wylie cites psychological and economic warfare—specifically World War II submarine campaigns—as examples of cumulative strategy.

Now let's turn to the element of time:

> TIME BECOMES THE CRITICAL DETERMINANT OF COMBAT ADVANTAGE.
>
> *JEFFREY COOPER*
> DOMINANT BATTLE SPACE KNOWLEDGE
> AND FUTURE WARFARE[7]

In *On War*, Carl von Clausewitz stresses surprise and the rapid use of forces while in the offense: "Speed and impetus are its [the attack] strongest elements and are usually indispensable if we are to defeat the enemy."[8] The importance of time in battle to disorient an opponent was further stressed by John Boyd, who believed each opponent in a conflict must execute an OODA loop in order to act, or react, to an adversary's initiative.[9] The player able to execute this OODA loop faster, or to operate at faster tempo, will generate confusion and disorder in the enemy camp.

The concepts of cumulative strategy, time, and dislocation are brought together to execute accelerated cumulative warfare. America's development of technological advantage of near total information dominance combined with precision weapons—and the ability to engage and support land troops to achieve tactical positional advantage—allows the rapid execution of individual engagements anywhere in the battlefield. The ability to compress these engagements in time creates the accelerated cumulative effect of disorientation, confusion, and dysfunction on the enemy.

Harlan Ullman and James Wade describe the capability to apply force rapidly to intimidate and overpower an enemy in *Shock and Awe, Achieving Rapid Dominance*. This view contends that by targeting both the adversary's society and military, leveraging America's advantage to achieve rapid dominance, and applying the critical element of time in execution, sufficient shock and awe can be generated to "deter and overpower an adversary through the adversary's perception and fear of his vulnerability and our own invincibility.[10] The cumulative effects of the continued application

of force to breakdown an enemy's system and society until he is forced to surrender are included in Ullman and Wade's *Shock and Awe* strategy.

How do we achieve the rapid dominance for shock and awe, or obtain the information advantage necessary to execute accelerated cumulative strategy? The Joint Chiefs of Staff provide a guide in *Joint Vision 2010*:

JOINT VISION 2010
AND THE SERVICE'S INITIATIVES

JV 2010 is the Chairman's conceptual template for channeling the initiatives of the Armed Forces to leverage information and weapon technologies.   The document sketches future capabilities and operations closely aligned to Liddell Hart's "distributed aim advance"—an offensive concept that strives to achieve victory through cumulative results by distributing the objectives and goals on the battlefield. It states:

BY 2010, WE SHOULD BE ABLE TO CHANGE HOW WE CONDUCT THE MOST INTENSE JOINT OPERATIONS. INSTEAD OF RELYING ON MASSED FORCES AND SEQUENTIAL OPERATIONS, WE WILL ACHIEVE MASSED EFFECTS IN OTHER WAYS. INFORMATION SUPERIORITY AND ADVANCES IN TECHNOLOGY WILL ENABLE US TO ACHIEVE THE DESIRED EFFECTS THROUGH THE TAILORED APPLICATION OF JOINT COMBAT POWER. HIGHER LETHALITY WEAPONS WILL ALLOW US TO CONDUCT ATTACKS *CONCURRENTLY* THAT FORMERLY REQUIRED MASSED ASSETS [EMPHASIS ADDED].[11]

JV 2010 calls for the development of four operational concepts—dominant maneuver, precision engagement, full

dimensional protection, and focused logistics—to obtain Full Spectrum Dominance over a future enemy. Briefly, the vision defines these operational concepts as:

- *Dominant Maneuver*—multidimensional application of capabilities to employ *dispersed* forces (air, land, sea and space) to achieve positional advantage and control all dimensions of the battle space
- *Precision Engagement*—the ability to locate, target, employ weapons, and assess damage to an objective or target with a responsive, real-time command and control system
- *Full-dimensional protection*—provide engaged forces continuous multilayered defenses to allow for their complete freedom to deploy, maneuver, and engage
- *Focused logistics*—responsive and flexible delivery of tailored logistics packages at all levels of operations.

The development of these four concepts will enable U.S. forces to dominate all levels of military operations. At the highest intensity of conflict, the synergy provided by complete battlespace dominance, maneuver, and precision weapons will allow for fewer, dispersed forces to employ overwhelming massed effects against the enemy.

Each service is exploring operational concepts that closely parallel the *JV 2010* overarching framework. These concepts seek to maximize the unique contributions the services can provide to the joint battlefield. As a result, the services are tending to polarize toward two gross-level offensive functions:

> **"SCOUT-AIMERS" AND "SHOOTERS"**

The Army "Force XXI" and digitalization of the battlefield initiatives lean toward a lighter, mobile force with more lethal organic

weapons and the ability to accurately locate our own forces and target the enemy. The Marine Corps Sea Dragon laboratory is investigating the capability to generate rapid, effective raids against tactical and strategic targets. As these initiatives evolve, land forces could develop a "scout-aimer" role. The "scout-aimer" forces would be inserted and dispersed throughout the battlefield to provide accurate and real-time knowledge of enemy forces and strategic positions, then rapidly attack targets with organic assets or by directing precision weapons launched from distant "shooters."

Under the accelerated cumulative strategy, these units would access the overarching command, control, and information nets, then act autonomously to establish battle space dominance over their assigned operating area. This is analogous to the way the United States conducted submarine warfare during World War II. The submarine's captain was given general directions and intelligence on the enemy when available and assigned a patrol area to sink enemy shipping. Future land force units would differ in execution only in their ability to access targeting information rapidly, their flexibility in being redirected to other objectives, and their capability to access a remote inventory of weapons from the "shooters."

The "shooters"—responsive, powerful, and stealthy—will trace their origins to the Air Force "Global Engagement" and the Navy "Forward, From the Sea" strategies. Development of air- and sea-based platforms (e.g., Joint Strike Fighter, Arsenal Ship) with precision and submunitions standoff weapons, will provide for engagement of objectives across the tactical and strategic spectrum. In combination with Army land-based fire support forces, these shooters will be assigned in a direct support role for the engaged "scout-aimers" during critical phases of the offense. Their weapons inventory would be predesignated to a particular ground fighting element and be available for immediate access to attack planned targets or targets of opportunity. Additionally, rapidly deployed Air Force and Navy forces will provide initial theater defensive capabilities for own-force, full-dimensional protection and construct

the extensive information and command and control networks required to web dispersed elements of the force together:

> **COMMUNICATION AND COMMAND:**
> **THE NAVY WAY!?**

Nonhierarchical information and fusion networks will link the "scout-aimers," "shooters," and commanders. These networks will be the daughters of the current communication and weapon control initiatives such as Cooperative Engagement and strategic command and control systems. The future networks will be characterized by universal access, automatic fusion capability, and advanced decision algorithms. These advances will result in a "flattening" of the command structure and smaller command staffs.[12] Communications and coordination between commanders, dispersed ground forces, and supporting weapons arsenals will be in real time.

Several problems can arise from a traditional centralized command strategy with these new capabilities. The first is micromanagement of the engaged units by layers of commanders and political leaders.[13] An undesirable tendency for group think and collective process decisionmaking occurs when everyone is tempted to "have their say." The outcome is group consensus decisions that tend to be risk adverse.[14] Additionally, on-scene individual initiative is discouraged and ingenuity minimized.

An alternative command strategy to use with nonhierarchical information and fusion networks is "command by negation."[15] Borrowed from the Navy, this concept allows a subordinate maximum freedom to execute a mission or task after receiving general policy guidance and objectives. If the overall commander perceives a situation developing requiring intervention, he makes immediate corrections, gives further guidance, then allows the subordinate to continue executing his tasking. In accelerated

cumulative warfare, an evolved form of "command by negation" would allow ground forces maximum flexibility in their operating areas to establish a local information sensor mesh, then attack predesignated targets or targets of opportunity.[16] Freedom of action and personal initiative by local unit commanders would be maximized under this concept of operation. Senior commanders would be less interested in individual sector engagements and more concerned with the larger cumulative effect on an enemy. When required, however, individual units could mass fire effects through senior command intervention and coordination. This operational concept will require a more decentralized thought process by conventional joint force commanders. It will require them to "let go" of tactical operations, maneuver, and theater resource allocation during execution in order to concentrate on the overall strategic effect against the enemy's ability to counter the offensive.

Another slide appears:

JV 2010 FOCUSED, OR "JUST-IN-TIME," LOGISTICS

As dominant battlespace knowledge helps lift the fog of war, weapons can be used more effectively and efficiently. Real-time knowledge of target location and immediate battle damage assessment will allow commanders to optimize weapon-to-target allocations. In addition, future "smart" weapons will be cheaper to procure and produce. They will not require expensive autonomous guidance systems characteristic of current cruise missiles. Instead, in-flight guidance will be provided by the overarching command and control net. More reliance on forward deployed naval forces, or rapid response air forces, with the capability to host large inventories of this cheaper ordnance will mean more teeth and less tail in the areas of operation. Together, this will make the "remote"

ordnance used by the "scout-aimers" less expensive to produce and more plentiful for use on the battlefield. Rearming, refueling, and feeding the engaged "scout-aimers" will also be possible as tailored resupply packages can be delivered directly to a unit's position or pre-determined supply point.

Now let's fight the war.

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│  FULL SPECTRUM DOMINANCE AND THE OFFENSE │
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The development of *JV 2010* operational concepts along with the services' initiatives will result in a battlefield where the orientation of the commander is vertical—looking down on the plane of the theater of operations—vice a horizontal FEBA-dominated view. This "death of the FEBA" concept means that all objectives in the theater would be equally accessible to the commander regardless of the enemy's front-line orientation.

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│  ACCELERATED CUMULATIVE WARFARE IN ACTION:│
│       BRIEF SEQUENTIAL CAMPAIGN BY AIR    │
│           AND NAVAL POWER                 │
│       INSERTION OF LAND FORCE UNITS       │
│       GENERAL OFFENSIVE: SHOCK AND AWE    │
│       ACCELERATED CUMULATIVE OFFENSIVE:   │
│          MODERN MAO!                      │
└──────────────────────────────────────────┘
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An example of this slide is a general engagement scenario against a future aggressor, which would begin with a brief sequential campaign for air and sea forces to establish information dominance and full dimensional protection across the theater. Following the area commander's selection of objectives, light and mobile yet organically powerful ground forces would be inserted throughout the theater to deploy their local sensor network and obtain positional advantage over preselected targets. The general offense

would proceed with these forces targeting the rear of the enemy's front line combat units while simultaneously attacking all lines of communication and command nodes. Fires from air, land, and sea forces against a wide spectrum of the enemy's forces would be compressed in so short a time period that they would generate an accelerated cumulative effect causing such a level of general disorientation as to immobilize the enemy's capacity for war.

What would a general engagement scenario against a future aggressor be like? Permit a creative license to convey a vignette through dramatic reading:

PREPARATION, DETERRENCE, ACCESS, AND INFORMATION DOMINANCE

The year is 2018. Over a decade earlier the "Great Islamic Revolution of 2005" had swept several established Middle East governments from power. Two of the new Islamic countries, Syria and Iraq, are allied in a quest to extend the Islamic extremist movement. Under the guise of an international claim for control of disputed water, electric power, and territorial rights from Turkey, the two allies amass their armies on their northern borders.

The old 20th-century NATO security arrangements have become irrelevant as Europe and Russia grew more integrated and prosperous in the last 15 years. Nonetheless, the United States responds to Turkey's plea for help. Weeks before, the United States shared real-time satellite video with the United Nations showing the preparations of the combined Arab armies. Despite world and fellow Arab condemnation, the two allies continue their mobilization.

In response, the President orders the arsenal ship Robinson, *the aircraft carrier* Vinson—*with the Joint Force commander embarked—and three Aegis destroyers to take position off the Syrian coast. In addition, the Air Force AWACS, JSTARS, and tactical aircraft are granted basing rights in Italy and northern Turkey. U.S. Army air-defense batteries, fire-support forces, and armor units are mobilized to follow. The early-arriving forces, along with national sensor capabilities, are tasked to initiate an information mesh throughout the region, position themselves to build a missile defense umbrella for follow-on troops, and provide a credible and*

visible deterrent. Thus begins a brief sequential campaign by U.S. forces to establish information dominance and full dimensional protection across the theater.

Undeterred, and hoping to provide the catalyst for a larger Middle East Islamic war, the armor, missile and air forces of Syria and Iraq strike while U.S. assets are still flowing into theater. U.S.-based strategic and theater tactical air forces assist Turkey's army to slow the Arab offense and establish command of the air space. Modern cruise missiles launched from the decks of the Robinson *and the Aegis destroyers complement air strikes against the enemy's forces. Theater ballistic missile attacks are countered with air defense weapons from Army batteries and Navy ships. Concurrent with the fighting, U.S. forces complete establishing an overall command and control network that is continually updated by remote tactical, airborne, and national sensors.*

SS Gunther *and two other arsenal ships arrive 5 days after the war begins. Immediately assimilated into the command network, their missiles are assigned for use by Army and Marine units scheduled to be inserted into Syria and Iraq for the counter-offense.* Gunther's *missiles and guns have been allocated to an Army task force designated* White Falcon. *Now, 20 minutes prior to commencement of the U.S. and Turkish offensive,* Gunther *receives her first fire mission data transfer.*

"Captain, TAO," says the Tactical Action Officer in Gunther's *Combat Information Center, "We are receiving the first fire mission from Task Force* White Falcon. *"*

Commander Peterson, captain of the decade-old arsenal ship, acknowledges this report by pushing a mike button next to his chair while viewing a large video plot in the middle of the ship's combat center. The plot displays a three-dimensional geographic representation of the battle area. Superimposed on its topographic, oceanographic, and weather data are hostile, friendly, and neutral force positions. Peterson believes the display gives the impression of reconnoitering a miniature Syria from a low-flying helicopter.

"Display the mission profile," orders Peterson to his watch team. In moments a small line originating from a tiny virtual Gunther *appears on the video plot and draws itself through the three dimensional scene to terminate on what appears to be miniature missile launchers. The*

demonstration satisfies the captain. All his systems are functional and prepare for launch.

Within 5 minutes, 50 more fire missions are received and automatically processed by the arsenal ship's weapon systems. Minutes later the vertical launch hatches on Gunther *open and the ship's deck explodes in light as missile after missile flies out of the cells. Hundreds of others follow from aircraft, submarines, and sister arsenal ships as their land forces ashore target and attack enemy positions. The counter offensive has commenced!*

Lieutenant Colonel Tinker commands Task Force White Falcon. *After parachuting into Syria 20 hours before, he now leads his command in establishing their local information mesh, netting into the command network, and targeting enemy positions. In preparation for the offense, Tinker distributes* White Falcon *into sections to attack several targets simultaneously in their 10 x 10-mile operating area. He now watches the offense unfold on a miniature video display similar to* Gunther's *video plot.*

Tinker could select between a theater display to view his supporting ships, aircraft, and fire support batteries, or an operational one that focused on his assigned area. In the theater mode he could also order logistic support, or assess the progress of his fellow commanders in adjacent areas and assist them if necessary. As Gunther's *missiles stream into his operating area to supplement White Falcon's own weapons, however, Tinker concentrates on his tactical display and prepares to adjust his fire plans as battle damage assessments are received. The initial reports are promising. Tinker estimates that it will be no more than 15 hours before* White Falcon *"owns" their operating area.*

Syrian and Iraqi generals do not have time to display, let alone evaluate, the hundreds of engagement reports received from the front and throughout their territory. They had expected strategic strikes, and several of their command centers are in receipt of them, but they search in vain for the focus of the ground offense. The Turks fire on their front lines while the Americans seem to be everywhere at once! Their armor units are attacked from the front, rear, and from above. Large portions of their territory are simply lost to them. Their own computer, radio, and TV waves are filled with American broadcasts—some modified to appear that their own

*government was calling for a general surrender! Within hours they lose
the ability to communicate, attack, resupply, and defend themselves.*

*Their political leaders are not discouraged, though. They continue to
fight on! After 3 days of fighting, however, the remaining pockets of
Syrian and Iraqi forces still resisting have no food, no fuel, no ammunition,
and no way to resupply, communicate, or maneuver. In contrast, the
Americans fly in needed logistic requirements to their operating forces
without interference. American and Turkish armor easily penetrate what
the Syrians and Iraqis consider their front lines. The political leaders flee.
The remaining colonels sue for peace.*

If the initial offensive does not produce sufficient "shock and
awe" to result in a quick victory like our scenario, the deployed land
units will continue to establish dominance in their sectors to create
a debilitating cancer in the enemy's operational area. This form of
accelerated cumulative warfare will be analogous to a rapid guerrilla
strategy envisioned by Mao Tse-Tung.[17] U.S. land units will
operate behind enemy lines, further widening their "guerrilla zones
and bases" until the enemy forces are in isolated pockets of
resistance. Our rapid "modern Mao" strategy, however, will give
the American "guerrillas" superior logistics, weapons, and
command and control capabilities. Their actions, in concurrence
with the strategic efforts of air, naval, and information warfare
assets, will create a spatial and temporal envelopment of the enemy.
A recent operation demonstrating the cumulative effect of
dispersed objectives is the NATO air strikes against the Bosnian
Serbs. Multiple targets were selected for simultaneous strikes to
achieve an overall demoralizing effect. The Serb center of gravity
was identified as the will to continue fighting. Consequently, the
objective of the offense was to attack their will by demonstrating the
hopelessness of armed resistance against a superior technological
force.[18] The operation was a success.

"That concludes the body of my presentation," the lecturer
announces. "We will now take a 15-minute break before
summarizing." As the audience leaves the lecture hall, the spirits of
classical military strategists gather in a circle to begin their

evaluation of this "envelop warfare" and its "accelerated cumulative" strategy.

FROM MANEUVER TO ENVELOP WARFARE:
A SEMINAR WITH THE MASTERS OF WAR

"Nothing new here," explains Clausewitz. "In my writings I state, 'The conduct of war depends entirely on the instrument employed'[19] and of course, 'The art of war is the art of using the given means in combat.'[20] Obviously, the advance of weapon technology has allowed the conduct of war to capitalize on my theories of the importance of speed in the offense, 'offensive war requires above all a quick, irresistible decision'."[21] Clausewitz continues, "In addition, although the speaker was negligent not to quote me at the beginning of his lecture, I too, described cumulative warfare:

> Contrasting with this extreme view of the connection between successes in war, is another view, no less extreme; which holds that war consists of separate successes each unrelated to the next, as in a match consisting of several games. The earlier games have no effect upon the later. All that counts is the total score, and each separate result makes its contribution toward this total.[22]

I wrote this before either Captain Liddell Hart's or Admiral Wylie's birth."

"Now Carl," responds Liddell Hart, "you also wrote a lot about the concentration of force against a particular objective, whereas I correctly identified variants to your simplistic idea and foresaw the concept of a dispersed advance against various objectives, clearly the central premise of this strategy. In addition, the objective of accelerated cumulative warfare is obviously strategic dislocation, both in the physical and psychological sphere. By attacking throughout the battlefield, this spherical envelopment strategy uses the highest form of my indirect approach. By identifying and attacking accessible and 'high leverage' objectives in a sudden offense, we can physically dislocate the enemy's disposition, endanger his supplies and communications, and impress on the

commander his inability to counter any of our moves. The result: physical and psychological dislocation!"[23]

"Liddell Hart, we are aware that no one has a higher opinion of your theories than their originator. However, let me demonstrate how my concepts of concentration do apply to this envisioned future form of warfare," Clausewitz responds. "I state that *relative* superiority at the decisive point is required, and that the calculation of time and space appears to be the most important factor in achieving this relative superiority. Granted, as my battlefields did not include airlift, armored vehicles, cruise missiles, attack helicopters, satellites, and other envelopment technologies, I was referring to the speed and march of armies. The compression of time and battlespace through the use of technology, however, does not diminish the importance of the original principle. Specifically, this theory identifies the center of gravity as the enemy's ability to conduct a coordinated and sustained response to our offense. By attacking objectives to defeat this center—and obtaining relative superiority at each objective through a combination of tactical surprise and effective, simultaneous strikes—we may achieve a decisive victory. In this case, the relative superiority is our ability to engage objectives faster than our enemy can respond, and our accurate appraisal of the objectives to achieve his demoralization."[24]

"It won't work!" Jomini says. "You two are focusing only on the enemy's lines of communication. What of our own? How do you identify your lines of communication with forces dispersed *between* the enemy's combat elements and his bases? You have cut your own lines through employment of your forces! It is a self-defeating strategy!"

"Maybe I could help here," says Corbett. "To satisfy supply of our own forces in a spherical envelopment strategy, we must extend my thesis of the uniqueness of maritime lines of communications to the spheres of the airspace and electromagnetic dimension of the battlefield. As I have explained, maritime communications between enemies generally run parallel, whereas in land warfare they run opposite each other. However, with the advent of air resupply, and command and control via radio waves, only command of the air and

the electromagnetic spectrum need be obtained to secure viable supply and command routes to these dispersed forces. Better, if a large portion of these engaged forces are unmanned remote control weapons and scouts, a large resupply effort may not be required."[25]

"Yes, first command of air, sea, and information conduits must be assured before the commencement of an accelerated cumulative offense," replies Clausewitz. "Even this strategy has elements of sequential warfare, confirming my writings, 'so we will never find war in which the second concept (cumulative) is so prevalent that the first (sequential) can be disregarded altogether'."[26]

Clausewitz continues, "Does this, however, reveal a possible weakness to the strategy? It assumes we have a clear technological advantage over the enemy, so that we may dominate him in all dimensions and spectrums of the battlefield. It also implies our allies will be able to participate in our offense on almost equal technological terms. Relationships between ally and enemy have been fluid in history. An ally may become an enemy. Therefore these assumptions may be contradictory and imply a danger in losing information dominance. This, in turn, would mean the inability to obtain command of this spectrum and the loss of absolute targeting, locating, and attacking enemy forces—in short, a return to heavy 'fog' in the execution of the battle. Interestingly, in today's environment of rapid technological evolution, what I referred to as the preparation for battle—or maintaining technological advantages in critical weapon and information systems with trained, knowledgeable troops—may now be as critical as the strategy of the battle itself!"

"As usual," replies Liddell Hart, "you forget to explore alternative solutions. Sharing every information technology with allies is not necessary if you plan to confine their participation to limited roles. For example, they could provide the symmetric response of a defense against the enemy's front lines. Only with those allies we trust most would we share our technological advances. Finally, Carl, you must admit that the United States excels in technology. Information technology is a great strength of its armed forces. By applying a source of great strength against a

relative weakness of its potential enemies, the United States applies one principle of my theories on indirect approach."

Sun-Tzu then raises his wizened head. "It is written, 'It is the nature of the army to stress speed; to take advantage of the enemy's absence; to travel unanticipated roads; and to attack when they are not alert.'"[27]

"What does THAT mean?" interrupts Jomini.

Sun-Tzu patiently smiles, "It means two things. For the strategy of accelerated cumulative offense—a concept that appears to have no limit of boundary or time in selection of objectives in the battlefield—it means an advantage of an indirect and asymmetrical approach, *as long as the enemy fights in the symmetric style.* On the other hand, if he knows our strength, and is intent on violence, then he may select not to attack with armies, but conduct warfare against our economic information systems or employ international piracy, terrorism and guerrilla warfare campaigns to disrupt our international lines of communication.   If the enemy chooses to develop capabilities to follow this nontraditional path, we must anticipate him and develop counters to his thrusts. Fortunately, many of the technologies required for our offensive strategy complement preparation for a defense against these measures. To summarize, we must know our enemy and prepare to defeat him."

"Well, that is the most I have ever heard him say at one time!" exclaims Jomini.

"The audience returns," states Corbett. "Let us, likewise, return to our seats."

The lecturer returns to the stage and displays another slide:

SUMMARY: CONCLUSIONS AND RISKS

HOT WASH UP: AFTER THE MASTERS' SEMINAR

To summarize, if *JV 2010* does produce the capability for an accelerated cumulative offensive strategy by leveraging a large advantage in information dominance and precision weapons, victory may be achieved by complete disorientation of the enemy. With such a dispersed and rapid offense, we could so minimize our own OODA loop that the enemy has no time to orient himself, let alone react to our actions. The envisioned technologies would allow us to capitalize on Clausewitz's speed for the offense and the advantage of reversed fronts, achieve Liddell Hart's dispersed objectives and indirect approach, and create the impression on the enemy commander that he is against Sun-Tzu's formless military deployment. Better yet, by threatening such an advanced technological response, or demonstrating our vastly superior information capabilities, we may deter the enemy from action and obtain Sun-Tzu's highest aim—victory without bloodshed.

While developing this grand vision, though, we must wrestle with at least four issues. The first is maintaining technological leadership. This implies knowing the status of potential enemies' developments toward their own revolution in military affairs, and being able to fund expensive technologies adequately for information and weapon systems ahead of them. The United States then must maintain intelligence efforts on potential adversaries, develop counterinformation warfare initiatives, and continue to evolve toward a coherent and seamless C^4I architecture. We will not be alone in these efforts. An information and technology "arms race" could easily develop.

Second, the level of integration of allies into the command and control web of our future battlefield must be considered. These decisions must be made during international training exercises prior to employment of forces for war. In turn, this could have an effect on the technological arms race as information is shared among allies and possibly obtained by potential adversaries.

Third, if we are successful in convincing potential adversaries of the futility of conventional armed conflict, they may seek alternative ways to modify our will through terrorism, nuclear black mail,

economic information disruption, and guerrilla warfare. Small units, trained to operate independently in the accelerated cumulative strategy, are also well prepared to engage many of these threats. We must, however, continue to develop intelligent methods to monitor and explore effective defenses against these dangers.

Finally, the current U.S. military force structure must evolve as information capabilities and affordable precision weapons become available. As stated earlier, the services have various initiatives that lay out general concepts to exploit these technologies as they are delivered to the operating forces. To maximize their potential, however, a coherent long-term program is required with a common horizon for all the services.

JV 2010 provides the template to develop operational concepts to allow the United States to dominate any future adversary across all levels of armed conflict. Fulfillment of these concepts, while ensuring flexible options by not overspecializing the services, will be the challenge for our policy makers during the next 20 years.

Thank-you for your attention.

* * * * *

"An interesting proposal," evaluates Corbett as the audience departs to critique the strategy in their own seminars.

"Yes," Clausewitz agrees, "worthy of further consideration. I was surprised, however, that he failed during the concluding remarks to stress the philosophical challenge required of commanders to allow their subordinate units almost complete independence in the execution of operations."

"For their conventional forces," Liddell Hart responds, "it will undoubtedly be an adjustment. They will learn to focus on the emergent strategic goal of this complex offense vice the maneuver of troops. The American special operation forces and certain naval components have experience in this form of command strategy. I think the larger challenge, however, will be to identify strategic measures to evaluate the effectiveness of an accelerated cumulative strategy while the offense is in progress."

"Truly a consideration," interrupts Sun-Tzu. "It is time, however, for us to disperse to the various seminars and inspire the young men and women to explore these ideas. There is much more for the strategist to ponder!"

Jomini turns to Clausewitz and whispers, "Must he always have the final word?"

"Yes!" is Sun Tzu's reply.

NOTES

1. B. H. Liddell Hart, *Strategy*, 2d rev. ed. (New York: Penguin Books, 1991), 333.

2. J. C. Wylie, *Military Strategy: A General Theory of Power Control* (New Brunswick: Rutgers University Press, 1967; reprint, Annapolis: Naval Institute Press, 1976), 23.

3. Martin C. Libicki, *The Mesh and the Net*, 2d ed. (Washington: National Defense University Press, 1995), 32.

4. Sun-Tzu, *The Art of War*, trans. Ralph D. Sawyer (Boulder: Westview Press, 1994), 193.

5. John R. Boyd, "A Discourse on Winning and Losing," unpublished briefing, August 1987. The concept of the OODA loops was introduced by Colonel Boyd.

6. An emergent phenomenon from complex systems such as war can best be viewed in terms of complexity theory that emphasizes the view of the whole. Accelerated cumulative strategy depends on the emergent characteristic of a campaign that is executed in a decentralized manner. Lieutenant Colonel James Terry captured the idea of applied complexity theory in a Naval War College paper, "Balancing the Vision: Comparative Frictional Advantage."

7. Jeffrey Cooper, "DBK and Future Warfare," in *Dominant Battlespace Knowledge*, 2d ed, eds. Stuart E. Johnson and Martin C. Libicki (Washington: National Defense University Press, 1996), 95.

8. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1989), 624.

9. Boyd.

10. Harlan Ullman and James Wade, Jr., *Shock and Awe: Achieving Rapid Dominance* (Washington: National Defense University Press, 1996), 60.

11. *Joint Vision 2010* (Washington: Joint Chiefs of Staff, 1996).

12. David S. Alberts, *The Unintended Consequences of Information Age Technologies: Avoiding the Pitfalls, Seizing the Initiative* (Washington: National Defense University Press, 1996) 23.

13. See Thomas A. Keaney and Eliot A. Cohen, *Revolution in Warfare? Air Power in the Persian Gulf* (Annapolis: Naval Institute Press, 1995), 217.

14. Ibid., 37.

15. The command strategy is similar to the Army's "Silence is consent" used by the fire support unit.

16. Thomas Czerwinski of National Defense University introduces one such evolved command strategy termed "Command by Influence" in "Command and Control at the Crossroads," *Marine Corps Gazette* 79, no. 10 (October 1995): 13-15.

17. Mao Tse-Tung, *Selected Military Writings of Mao Tse-Tung* (Peking: Foreign Language Press, 1968), 157-175.

18. Lecture by ADM Leighton W. Smith, Commander IFOR, Bosnia, to the National War College, September 17, 1996.

19. Carl von Clausewitz, *On War*, 174.

20. Ibid., 127 .

21. Ibid., 598.

22. Ibid., 582.

23. Hart, *Strategy*, 326-327.

24. Clausewitz, *On War*, 196-197.

25. Julian S. Corbett, "Strategical Terms and Definitions used in Lectures on Naval History," in *Some Principles of Maritime Strategy*, (London: Longmans, Green and Co., 1918; reprint, Annapolis: Naval Institute Press, 1988), 322.

26. Clausewitz, *On War*.

27. Sun-Tzu, *The Art of War*, 220.

<center>2</center>

USE OF THE MILITARY IN DOMESTIC OPERATIONS

LEGAL PRECEDENTS AND INSTITUTIONAL CONFUSION

SEAN J. BYRNE

THE DEPARTMENT OF DEFENSE "MAINTAINS AND EMPLOYS THE Armed Forces to:

- Support and defend the Constitution of the United States against all enemies, foreign and domestic.
- Ensure, by timely and effective military action, the security of the United States, its territories, and areas vital to its interests.
- Uphold and advance the national policies and interests of the United States.
- Safeguard the internal security of the United States."[1]

This mission statement leaves little room for interpretation. Defense against foreign and defense against domestic enemies have the same priority, but when reflecting on military involvement in

Lieutenant Colonel Sean J. Byrne, USA, was a student at the U.S. Army War College when he wrote this paper, which won recognition as a Distinguished Essay in the 1997 Chairman of the Joint Chiefs of Staff Strategy Essay Competition.

defense of American sovereignty,[2] most envision engagements being fought against foreign enemies on distant battlefields. In fact, the majority of battles to safeguard national security and defend America's values have been fought on U.S. soil.

Although precedents have been established, considerable concern over the legal authority and limits on the use of the Armed Forces in domestic actions continues. Concerns include fear that "use of military forces may expose civilian government to the threat of military rule and could lead to the suspension of constitutional liberties and on a lesser scale, that military enforcement of the civil law could leave the protection of Fourth and Fifth Amendment rights in the hands of persons who are not trained to uphold these rights."[3]   These concerns were well documented by our Founding Fathers and formed much of the basis for the Declaration of Independence and the Bill of Rights. Over the last 200 years, Congress and the executive branch, in the face of new and expanding threats to our national security and well being, have increased the military's responsibilities in domestic operations. However, these changes have been in accordance with the intent of the Founding Fathers—that the military (in today's terms, active, reserve and Guard forces) would provide for the common defense while remaining subordinate to its legally designated civilian leadership. These nuances are significant because, while some will argue against virtually any involvement by the military in domestic operations,[4] that involvement is key to safeguarding national security and guaranteeing the continued freedom of our citizens. While controversial, under specific circumstances use of military forces in domestic operations is not only appropriate, but legal and warranted. The Armed Forces have constitutionally mandated responsibilities to safeguard the nation and its people and, as such, will continue to be the instrument of choice for the National Command Authority during emergencies, be they foreign or domestic.

The confusion appears to be based on three factors:

- Preconceived notions concerning civil/military relations based on incomplete information
- Lack of knowledge concerning the history and intent behind a number of key legislative actions governing these operations
- A failure to fully comprehend the part Congress has played in the evolutionary expansion of the military's role in domestic operations in order to combat new threats (while ensuring actions are taken in accordance with the intent of our founding fathers).

This study addresses the role of the military in support of civil authorities and the effect legal and cultural considerations have on its applications. It further outlines the legal and historical framework for military involvement in domestic actions and addresses a number of misconceptions and philosophical challenges faced by the Armed Forces in these kinds of actions.

LEGAL, HISTORICAL AND CULTURAL PRECEDENTS

Throughout U.S. history, the three branches of government have often been at odds concerning interpretations of the Constitution; however, they have consistently expressed long-standing concerns and biases against involving the Armed Forces in domestic actions. These concerns have been addressed in the Declaration of Independence and the Constitution and through acts of Congress and Supreme Court decisions. In light of these considerations, it is important to have a grasp of the "laws of the land" before discussing specific issues.

While domestic use of the Armed Forces has been a feature of government in the United States since President Washington called out the militia to put down the Whiskey Rebellion in 1794,[5] the issue of limiting that involvement was raised well before. "The Declaration of Independence states among the grounds for severing ties with Great Britain that the King, 'has kept among us, in times

of peace, Standing Armies without consent of our Legislature . . . (and) has affected to render the Military independent of and superior to the Civil power."[6]

These concerns were subsequently raised at the Constitutional Convention by Luther Martin, a delegate from Maryland, when he said, "When a government wishes to deprive its citizens of freedom, and reduce them to slavery, it generally makes use of a standing army."[7] The Constitution addressed these issues by putting strict limitations on the role of the military in civilian affairs. It divided authority over the Armed Forces by making "the President, the highest civilian official in the Executive Branch, Commander in Chief of the armed services" [article II, section 2]; "and grant[ing] to the Congress the power to make rules to govern the armed forces Article I, section 8, clause 14]."[8] It further states "Congress shall have the power . . . to provide for calling forth the Militia to execute the Laws of the Union, suppress Insurrections, and repel Invasions"[9] and requires the Federal Government to protect each of the states "against Invasion; and on the Application of the Legislature, or of the Executive (when the Legislative cannot be convened) against domestic violence."[10]

The Supreme Court has also noted both constitutional limitations and public concern over military involvement in civilian affairs. In deciding the 1972 case of *Laird vs. Tatum*,[11] the court reaffirmed this position when it stated, "The concerns of the Executive and Legislative Branches . . . reflect a traditional and strong resistance of Americans to any military intrusion into civilian affairs."[12]

POSSE COMITATUS[13]

On a number of occasions during the early years of our country, Congress passed acts authorizing the use of the militia to aid in law enforcement during emergencies. Throughout the Reconstruction period after the Civil War, Army units performed as posse comitatus (law enforcers) in numerous and varied disorders. In the majority of these instances the military were under the direct control of state governors and U.S. marshals and outside the federal chain

of command. Under these circumstances marshals and governors found it increasingly easy to call on the Army rather than face the difficult political consequences of keeping order.[14] Abuses during this period, for the most part by civilian authorities, led Congress to pass the Posse Comitatus Act in 1878. This act created a general prohibition against the use of military personnel in law enforcement. The statute, as amended, specifically provides:

> Whoever, except in cases and under circumstances expressly authorized by the Constitution or Act of Congress, willfully uses any part of the Army or the Air Force as a posse comitatus or otherwise to execute the laws shall be fined not more than $10,000 or imprisoned not more than two years, or both.[15]

This statute prohibits the use of the Armed Forces in active law enforcement unless specifically authorized by the Constitution or acts of Congress. It is the key legislative act formalizing the American tradition of military subordination to a strong civil authority and placed the decision for federal intervention directly in the hands of the President.[16]

When arguing the case against military involvement in domestic activities, most cite the Posse Comitatus Act as their basis, but it is not the final word on the subject. Based on emergency situations and emerging threats to national security, Congress subsequently passed a number of exceptions clearing the way for significantly increased involvement by the Armed Forces in domestic activities.

Concern over the use of the Armed Forces in civil actions raises a question: Why do the executive and legislative branches continue to call on them? The answer is, in times of emergency, the Armed Forces are often not only the most effective and efficient assets available, but possibly the only assets available to maintain order. They can greatly enhance the effectiveness of civilian law enforcement by providing military technologies, equipment, information, and training.[17]

In acknowledging this situation, Congress enacted a number of exceptions to Posse Comitatus (Title 10, U.S.C., sections 331-335)

dealing with civil disturbances and insurrections.[18] "These statutes authorize the President to provide military assistance to state governments upon request (section 331) . . . or upon his own initiative to use the Armed Forces or federalized militia to suppress any rebellion that makes it 'impracticable to enforce the laws of the United States . . . by the ordinary course of judicial proceedings.' . . . (section 332). Section 333 also permits military intervention when the constitutional rights of any state's citizens are threatened by insurrection, domestic violence, unlawful combination, or conspiracy. Under section 334, before the militia can be called out, the President must 'by proclamation immediately order the insurgents to disperse,' that is, read them the riot act."[19]

In 1988 Congress further amended Title 10, U.S.C.,[20] providing exceptions "that authorize the Secretary of Defense to provide equipment and personnel to assist civilian agencies in the enforcement of drug, immigration and tariff laws. . . . But the statute expressly forbids 'direct participation by a member of the Army, Navy, Air Force, or Marine Corps in a search or seizure, an arrest, or other similar activity unless . . . otherwise authorized by law' (section 375). Nevertheless, military personnel may 'operate equipment' to intercept vessels or aircraft outside the land area of the United States, or follow in hot pursuit of such craft inland (section 374b). And Coast Guard personnel are assigned to naval vessels with authority to carry out searches and seizures and make arrests (section 379)."[21]

These two sets of amendments cleared the way for a dramatic expansion of DOD responsibilities in providing support to domestic law enforcement agencies. They also provide the executive and legislative branches with a standing force involved with domestic law enforcement activities on a day-to-day basis rather than the "by-exception" basis of previous years. These amendments represent a major philosophical shift in the use of the Armed Forces.

Based on these amendments, DOD participation in counterdrug operations became routine rather than contingency missions. Although in a support role, the Armed Forces were placed squarely in the middle of police-type activities. At first blush it would appear

these amendments could be in conflict with the intent of the Declaration of Independence, the Constitution and the Posse Comitatus Act by placing a potentially "unchecked military" in a position to infringe on Fourth and Fifth Amendment rights and subvert their civilian leadership. However, Congress went to great lengths to ensure that while expanding the counterdrug program within the United States, the military's support role would be clearly defined and civil/military relationships would not be subverted. Involvement would be only under the strict supervision of civilian authorities and "without directly involving military personnel in law enforcement confrontations with citizens."[22]

Because of the significance of this major policy and legal shift, the background behind this decision will be reviewed in more detail.

THE WAR ON DRUGS

In 1989 President Bush declared this nation "at war" with drugs. Since that time the policy of the United States has been "to disrupt, to dismantle and ultimately to destroy the illegal markets for drugs by attacking both the supply and demand side of the problem."[23] While different administrations and "Drug Czars" have slightly modified this policy, the theme has been relatively consistent over the years. Shortly after President Bush's declaration of the "war" on drugs, he directed, "We will for the first time make available the appropriate resources of the Armed Forces. We will intensify our efforts against drug smugglers on the high seas, in international airspace, and at our borders."[24] This declaration brought the Armed Forces into the battle under the exceptions to the restrictive provisions of the Posse Comitatus Act.

While President Bush provided a broad mission for the Armed Forces, specific responsibilities were provided by the Congress, which through statutes assigned the following duties to DOD:

- Acting as the lead agency in the detection and monitoring of aerial and maritime transit of illegal drugs to the United States

- Integrating U. S. command, control, communications, and intelligence, assets dedicated to drug interdiction into an effective communications network
- Approving/funding state governors' plans for expanded use of the National Guard in drug control within state borders."[25]

As enacted, these amendments are not in conflict with the Posse Comitatus Act but are part of an evolutionary process that the Act itself began 110 years earlier. Just as the Posse Comitatus Act was enacted to stop abuses in the employment of the military, these amendments were enacted to establish a legal framework to involve the Armed Forces in expanded national security missions to protect U.S. citizens from internal threats, while ensuring abuses would not take place. Since the military's missions already included ensuring the security of our borders, these new responsibilities simply became an expansion of those duties.

EXPANSION OF DOMESTIC MISSIONS

Prior to the amendments to the Posse Comitatus Act and President Bush's directive to expand military involvement in counterdrug operations, DOD had gone to great lengths to minimize its participation. In 1988, while an amendment to the defense authorization bill was being debated to make the Department of Defense the lead agency for detection of narcotics traffic and give the Navy limited powers of arrest outside U.S. waters, "Military leadership argued that the additional requirements for drug interdiction would detract from their principal mission, that the Posse Comitatus Act prevented a military role in searches and seizures, and that, in any case, further actions to stop the flow of drugs could not be undertaken unless more money was provided for the Five-Year Defense Plan."[26]

While each of these arguments may be somewhat flawed, they do raise a number of legitimate issues. From a strictly military perspective they include concerns over military involvement in "nonmilitary" missions; potential adverse affects these missions

could have on military readiness and warfighting skills; and anxieties that involvement in "nontraditional" missions would establish precedents causing the military to be unable to extricate itself from further participation. All these arguments are credible to a degree, but they did not sway congressional opinion. In fact, "Research indicates that under pressure to respond in a very visible way to the drug and crime problem, the Congress saw how the use of the Armed Forces would solve several needs: the military analogy properly fit the drug war image; the vast military resources of personnel, procurement authority, skills, and equipment would be an immediate infusion of resources into the problem requiring only limited additional funding."[27] It appears that regardless of arguments to the contrary, DOD received the mission because of the threat drugs pose to our national security and values, and the political sensitivity of the issue. Congressional testimony showed that DOD was criticized for its lack of aggressiveness in the drug support effort and that the determination was made that the military "can and should, do that kind of job."[28]

While that argument may have been accepted 9 years ago, when DOD budgets and manpower levels were for the most part on the upswing, the resource situation has now dramatically changed. Although fiscal cutbacks, personnel drawdowns, and mission creep have not "hollowed out" the Armed Forces to the extent of the post-Vietnam years, resources throughout the Department of Defense are being stretched. Compounding this situation, "Operational deployments (domestic and overseas) have increased by over 300 percent since 1989";[29] there is no reason to believe this trend will change. This portends a period of continuing belt tightening; in a zero-based budget environment,increases in funding levels are not expected, meaning new or expanded missions will take place only at the expense of other priorities or missions.

It would be easy to recommend that the situation be reviewed with an eye toward returning these responsibilities to law enforcement agencies and allowing a downsized military to return its troops and equipment to their services and primary missions, but it is unlikely that support to law enforcement agencies involved

with counterdrug operations will be cut back to any extent in the near future. The drug problem continues and according to most reports is worsening. Law enforcement agencies have become "dependent" on the support they receive from DOD, and it would be unrealistic to expect them to acquire the sophisticated technical capabilities of DOD. In fact, drug enforcement agencies in many instances have expanded their institutional capabilities as a result of the military support received.[30] While it appears the FY97 DOD budget will continue military counterdrug operations at current levels, a cutback in funding would have the effect of not only decreasing DOD involvement but also causing other agencies' programs to be curtailed because of their reliance on DOD support. However, because of the overall impact of the drug problem, it is doubtful the political leadership of this country would propose or allow any changes in funding or support that might imply a lowering of priority for the war on drugs. Therefore, in the future it is extremely doubtful there will be any decrease in DOD requirements and responsibilities in this area.

LAW ENFORCEMENT MISSIONS

DOD needs to closely scrutinize the manner in which it prepares for and responds to law enforcement missions. Although involvement in these actions is increasing, many support operations are done ad hoc, with minimal contingency planning prior to notification and deployment. It seems that every time a domestic emergency arises requiring military support, such as riot control or disaster relief, the force deploying "reinvents the wheel" and starts the planning cycle from scratch, because these operations are not generally the focus of routine training programs or contingency planning. Rather, these are often new requirements that place the units in roles for which neither the troops or their leaders have been trained. When called on, units generally have a limited time to prepare, be briefed on their mission, and then deploy. This routine has significant problems that must be understood and addressed.

During the last 8 years, involvement in counterdrug operations has become relatively routine for a number of units. However, even

when dealing with the routine, commanders must continually verify the legal justification for involvement. As previously stated, the Posse Comitatus Act, as amended,[31] allows the Armed Forces to provide equipment, training, and military advice to law enforcement agencies in counterdrug operations, but not to conduct searches, seizures, or arrests. However, there must be a link between the military support provided and the counterdrug operations conducted. Had legal advisors assigned to Joint Task Force 6 (JTF 6), which supported the Bureau of Alcohol and Tobacco and Firearms (BATF) during the 1993 siege of the Branch Davidian Compound in Waco, Texas, not questioned that agency's requests for support, the Armed Forces would have been inappropriately and illegally involved in an operation that ultimately led to the deaths of 76 U.S. citizens.

Joint Task Force 6 (JTF 6) conducts operations on the southwest border of the United States and provides ground/aerial surveillance, reconnaissance, and other support activities to law enforcement agencies involved in immigration activities and counterdrug operations—provided the appropriate legal nexus exists. Law enforcement agencies submit their requests for support through JTF 6, where they are reviewed and, if valid, forwarded to U.S. Forces Command for final approval.[32] In late 1992 the Bureau of Alcohol Tobacco and Firearms (BATF) requested "various types of assistance and equipment, including training sessions conducted by Green Berets, tanks, CS gas and . . . aircraft . . . in making the initial request for use of the helicopters . . . the BATF's Houston office did not mention any 'drug nexus.'"[33] The initial request identified an ongoing investigation "targeting persons believed to be involved in the unlawful manufacturing of machine-guns and explosives. These targets are of a cult/survivalist group, its letter requesting the . . . helicopters said. Four days later, however . . . the agency's Austin office followed . . . with a similar request which added 'the individual is suspected of unlawfully being in possession of firearms and possibly narcotics.'"[34] Without questioning the request, it appeared to JTF 6 that the "drug nexus" had been established and therefore the request was valid.

However, the drug connection the BATF used to justify their request for military support was not valid. After-action reports indicate the primary reason for BATF interest in the case was based on the belief that there was an illegal weapons arsenal in the Branch Davidian Compound.[35] The drug connection did not exist. In fact, evidence showed the "drug connection" used by the BATF had occurred a full 6 years earlier, and David Koresh, the leader of the Branch Davidians, had not only expelled the members involved but had notified the local police and provided them with evidence of the drug offenses.[36] The BATF used this 6-year-old offense to attempt to gain military support. The JTF Commander initially validated the request and "testified before Congress that he saw no reason to 'pierce the veil of the BATF request.'"[37] However, military lawyers conducted a further legal review that denied the request not being acted on. Had they not questioned what appeared to be a routine request, JTF 6 most certainly would have been involved in a clear violation of the Posse Comitatus Act and been accessories in a tragedy.

While counterdrug operations are becoming more the norm and generally allow for relatively detailed planning before employment, other operations, such as riot control, are contingency missions with deployments commencing immediately after alert notification, often without the time needed for detailed planning.

This leads to a second key requirement for commanders. Commanders must ensure that upon receiving their mission they have a clear understanding of the legal authority under which their forces are to be utilized. They must also understand the extent of military involvement, whether the military will be the lead agency or in a support role, and the rules of engagement under which they will operate. Problems in all of these areas arose during the recent employment of active duty and federalized National Guard forces to aid in quelling riots in Los Angeles, California, after the 1992 Rodney King trial[38] verdict.

When the Rodney King trial verdict was announced in April 1992, riots broke out beyond the control capabilities of local law enforcement authorities and the California National Guard. The

Governor of California requested federal support from the President, who issued an order for the rioters to disperse and an executive order authorizing the Secretary of Defense, in consultation with the Attorney General, to employ members of the Armed Forces to restore law and order. This order also federalized the California National Guard. A Joint Task Force of approximately 3,500 Marines and soldiers from Camp Pendleton and Fort Ord deployed 2 days later to restore order.[39]

The Task Force Commander and his legal advisors believed that because they were being employed to support domestic operations, the restrictions of Posse Comitatus applied. This was not the case, however, because the Act specifies that activities authorized by the Constitution or statute are exempt from the statute's limitations, and in this case forces were employed under statutory authority allowing the President to use federal troops to quell "domestic violence."[40] These restrictions did not apply, therefore, and federal troops were authorized to enforce and execute the laws.

Because the Task Force Commander did not understand this nuance, operational decisions were incorrectly based on the restrictions of Posse Comitatus rather than the considerably more flexible exceptions authorized under Title 10 U.S.C., Section 332. "Distinctions were made between military and law enforcement functions with actions such as transporting prisoners being considered law enforcement functions and therefore not supported. This misunderstanding permeated all military activities and led to underutilization (and improper use) of a potent force."[41]

Additionally, National Guard Forces were initially employed by the state governor under the control of the Los Angeles Police Department (LAPD) where they were involved in the entire range of law enforcement activities, but once federalized, they came under the control of the active duty JTF commander who initially, and incorrectly, removed them from that role during the height of the riot.[42] "The prospect of placing federalized National Guard soldiers under the operational control of the active duty Joint Task Force commander had not been adequately addressed or properly planned. For example, the Rules of Engagement were not initially

uniform throughout the JTF. . . (and) active duty forces were operating under far more restrictive covenants than the federalized National Guard."[43] These discrepancies were eventually rectified but only after considerable confusion.

This operation reinforced some very basic principles. Prior to engaging in domestic activities there must be a clear understanding of the authority under which the forces are to be utilized. When employed under the strictest interpretation of the provisions of Posse Comitatus Act, the Armed Forces are severely restricted. However, under presidential authority and directives,[44] as well as the current exceptions to the Posse Comitatus Act, a task force commander could be responsible for the entire range of law enforcement activities with considerably more authority and far less restrictive rules of engagement. Uninformed commanders may needlessly hinder forces, limit effectiveness, and place them in jeopardy if they do not understand the laws that govern their operations or are not aware of the responsibilities those laws place on their shoulders.

In addition to the examples discussed above, commanders must be aware that, regardless of the circumstances behind their deployment to support domestic operations, their performance will be closely scrutinized and could be subject to judicial review. While no case has been found involving criminal prosecution of anyone for violation of the Posse Comitatus Act,[45] violations are often argued as a defense by defendants being charged under other criminal statutes. Defendants often argue that a violation of the Posse Comitatus Act has occurred that taints the case against them solely because of military involvement in the operation that led to their arrest—regardless of the capacity under which the military forces were operating.

In 1973, when the defendants at Wounded Knee were charged with interfering with "a law enforcement officer lawfully engaged in the performance of his official duties,"[46] their defense was that "the federal marshals and FBI agents were not performing their duties lawfully, within the meaning of the statute, because they enlisted military forces as a posse comitatus. Others apprehended by the

military while attempting to smuggle drugs into the United States have argued that the evidence obtained in their arrests was inadmissible at trial. However, no court has yet agreed to apply the exclusionary rule because of Posse Comitatus Act violations."[47] Commanders and their legal advisors must ensure that the legal basis for involvement is defined and fully understood by all involved prior to commencing operations. While not a "Catch 22" for the military, it is clear that errors in interpretation of the law could lead to civil prosecution.

These examples identify a number of potential hazards faced by military forces when involved in domestic actions. In these cases the Armed Forces were fortunate; however, leaders of future operations who do not understand the authority for their mission, the extent of their responsibilities, and the planning and training required may not be so fortunate.

CONCLUSIONS

When asked if he believed the future would bring more involvement with civil authorities, the Commandant of the U.S. Marine Corps replied, "We view the increased Military support to civilian law enforcement as an inevitability. Starting with the war on drugs, forest fires, etc., will, we think, lead to more cooperation, not less. For the USMC, it's not a matter of seeking to do more as much as being prepared to do more when asked."[48]

Not only will the trend continue, but involvement will expand into areas that in the past would have seemed inconceivable. A few years ago it would have been hard to envision the Armed Forces involved in counterdrug operations, but today that involvement is commonplace. Given the vast DOD capabilities and resources for intelligence gathering, communications, and logistics operations, it is clear that many new avenues will be opened. As new threats are identified, the Armed Forces will be called on to confront them.

It is hard to rule out the continued expansion of domestic support operations for two reasons. While the Soviet Union existed, the primary focus of the Department of Defense was to defend our

nation's vital interests, primarily outside our national borders. However, during the last few years, without the Communist threat, there has been a far greater emphasis on looking inward to solve America's domestic problems. Missions for the Armed Forces have reflected this trend and have increasingly become more focused toward preservation of national values. Virtually all domestic missions fit this category.

Secondly, regardless of the arguments against it, the legislative history behind regulating military involvement in domestic activities has been an evolutionary process and will probably continue in the same manner. Just as the Posse Comitatus Act itself was enacted to stop but not prevent abuses in employment of the military, as times have changed, amendments have been enacted to establish the legal framework for increased involvement by the Armed Forces in still more national security missions. There is no reason to believe this trend will not continue as long as it does not compromise the Founding Fathers' vision of a military that is subordinate to civilian leadership and provides that leadership with a recourse when the ordinary process of law and order fails.

As much as military leaders may yearn to fight conventional battles against conventional enemies, the roles and missions of the Armed Forces will continue to change and reflect the needs of the American public. Actively seeking to avoid these challenges would be a disservice to the people of the United States. In defending the sovereignty of the United States, the Armed Forces must simply abide by the basic laws and principles under which our country was founded. The Armed Forces will often be the National Command Authorities' instrument of choice to deal with emergencies and difficult situations because their involvement in operations of this type is not only justified, but legal and necessary. It forms one of the basic foundations under which this country was founded. Those in the military must be cognizant of evolving threats to our national security and understand their role and responsibilities in defending the Constitution of the United States against all enemies, be they foreign or domestic.

NOTES

1.   Field Manual 100-1: *The Army* (Washington: Department of the Army, June, 1994), 15.   Also referenced in Department of Defense, *Functions of the Department of Defense and Its Major Components*, Department of Defense Directive 5100.1 (Washington: Department of Defense, 25 September, 1987), 17-18.

2.   Henry Black, *Black's Law Dictionary*, 4th ed. (St. Paul: West Publishing, 1991), 1396. Sovereignty is defined as "the supreme, absolute, and uncontrollable power by which any independent state is governed; supreme political authority; the supreme will; . . the international independence of a state, combined with the right and power of regulating its internal affairs without foreign dictation; . . . The necessary existence of the state and that right and power which necessarily follow is sovereignty."

3.   Stephen Dycus, Arthur L. Berney, William C. Banks, and Peter Raven-Hansen, *National Security Law* (Boston: Little Brown, 1990), 423.

4.   American Civil Liberties Union (ACLU) Press Release, various signatories, "Comprehensive Antiterrorism Act of 1995," December 6, 1995.   The letter, addressed to Representative Newt Gingrich, and simultaneously distributed as a press release, identified a number of concerns involving use of the Armed Forces in counterterrorism activities citing the Posse Comitatus Act as the basis for their argument. However, the letter did not detail exceptions to that legislation that legally cleared the way for military involvement.

5.   Dycus, 420.

6.   Ibid., 423.

7.   Ibid.

8.   Ibid.

9.   *Constitution of the United States*, art. I, sec 8.

10.   Ibid., art. IV, sec. 4.

11.   498 U.S. I, 15-16 (1972). The case revolved around a claim that the defendant's First Amendment rights had been violated by the existence of a data-gathering system maintained by Army Intelligence. The court held that the mere existence of the equipment did not infringe on the right of the plaintiff.

12.   Dycus, 423.

13.   Black, 1162. Posse Comitatus is defined as "The power or force of the county. The entire population of a county above the age of fifteen, which a sheriff may summon to his assistance in certain cases, as to aid him in keeping the peace, in pursuing and arresting felons."

14. Jerry Cooper, "Federal Military Intervention in Domestic Disorders," in *The United States Military Under the Constitution of the United States,* ed. Richard Kohn (New York: New York University Press, 1991), 134.

15. *Crimes and Criminal Procedures,* Title 18, U.S.C., sec. 1385 (1994).

16. Cooper, 135.

17. Dycus, 424.

18. *Armed Forces,* Title 10, U.S.C., sec. 331-335 (1980).

19. Dycus, 428-429.

20. *Armed Forces,* Title 10, U.S.C., sec. 371-380 (1993).

21. Dycus, 430.

22. Edward Stelzer, *Military Support to Law Enforcement Agencies: A Policy With Unintended Consequences,* Strategic Research Project (Carlisle, PA: Army War College, 1996), 13.

23. Office of National Drug Control Policy, *The National Drug Control Strategy* (Washington: U.S. Government Printing Office, 1990), 1.

24. Mathea Falco, "U. S. Drug Policy: Addicted to Failure," *Foreign Policy* 102 (Spring 1996): 122.

25. Joseph Bergantz, "Military Support of the National Drug Control Strategy," *Military Review* 72, no. 6 (June 1992): 67-68.

26. Amos Jordan, William Taylor, and Lawrence Korb, *American National Security Policy and Practice* (Baltimore: Johns Hopkins University Press, 1989), 167.

27. Stelzer, 11-12.

28. Ibid., 13.

29. Department of the Army, *United States Army Posture Statement: Meeting the Challenges of Today, Tomorrow, and the 21st Century,* presented to the Committees and Subcommittees of the Senate and the House of Representatives, 104th Cong., 2d sess. (Washington: Department of the Army, undated), 3.

30. Stelzer, 43-44.

31. *Armed Forces, U.S. Code,* Title 10, sec. 371-378 (1993).

32. *Military Support to Civil Authorities: Posse Comitatus Act, Civil Disturbances, Counter-Drug Support Operations, and Disaster Relief* (Charlottesville, VA: Department of the Army Judge Advocate General's School, undated), 29.

33. Richard Reavis, *The Ashes of Waco* (New York: Simon and Schuster, 1995), 124.

34. Ibid., 124-125.

35. Ibid., 125-126.

36. Ibid., 125.

37. Thomas R. Lujan, *Legal Aspects of Domestic Employment of the Army,* Strategic Research Project (Carlisle, PA: U.S. Army War College, 1996), 11.

38. The case involved an incident of the Los Angeles Police Department using excessive force in apprehending and arresting a suspect. The trial involved charges of police brutality. When the verdict was rendered on April 29, 1992, violence broke out throughout Los Angeles that the Los Angeles Police Department could not stop. The Governor of California requested federal assistance from the President, who in turn issued an initial proclamation to disperse and issued the executive order to the Secretary of Defense to employ members of the Armed Forces to restore law and order.

39. Lujan, 15.

40. *Armed Forces*, Title 10, U.S.C, sec. 332 (1956).

41. A Report by the Special Advisor to the Board of Police Commissioners on the Civil Disorder in Los Angeles, *A City in Crisis*, October 21, 1992, 154. As reported by Lujan, 17-18.

42. Warren Theis, *Domestic Role for the U.S. Army in the Post Cold War Period*, Strategic Research Project (Carlisle, PA: U.S. Army War College 1993), 11.

43. Department of the Navy, After Action Report, Joint Task Force Los Angeles-Garden Plot-Staff Judge Advocate, Section II c (4), 3. The Staff Judge Advocate of the Joint Task Force reported that inconsistent levels of arming were reported throughout the JTF. Specifically he noted that active-duty troops were uniformly at the correct level "one," while federalized National Guard units were noted at levels "one" through "six" apparently at the direction of first line leaders. As reported by Lujan, 16 and 30.

44. *Armed Forces*, Title 10, U.S.C., sec. 332 (1956).

45. Gates, "Don't Call Out the Marines: An Assessment of the Posse Comitatus Act," 13 *Texas Tech Law Review*, 1467, 1468, 1968; and Rice, "New Laws and Insights Encircle the Posse Comitatus Act," *104, Military Law Review*, 109, 110, 1984. As reported by Dycus, 428.

46. *Crimes and Criminal Procedures*, Title 18, U.S.C., sec. 231 (1994).

47. Dycus, 428.

48. Walter Wood (woodw@carlisle-emh2.army.mil), "CMC Address—Q&A IRT Inc Support to Civ Authorities," electronic mail to George Brock (brockg@carlisle-emh4.army.mil), then retransmitted to Sean Byrne (byrnesj@carlisle-emh4.army.mil), November 4, 1996. E-Mail response to

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a member of the Air War College faculty by the Office of the Commandant of the Marine Corps regarding a point made in an address to the Air War College student body on November 3, 1996.

3

SUB-SAHARAN MILITARY MEDICAL OPERATIONS

THE DOD "POINT OF THE SPEAR" FOR ENGAGEMENT AND ENLARGEMENT

C. WILLIAM FOX, JR.

ENGAGEMENT AND ENLARGEMENT, RHETORIC vs. REALITY

Engagement by the United States in sub-Saharan Africa in the mid-1990s is diminishing. Both real dollar expenditures and significant programs, such as those of the U.S. Agency for International Development (USAID), which have played a significant role in U.S. assistance in the past, are vanishing. Ironically, this is occurring as African states are desperately seeking development strategies that will attenuate the almost overwhelming problems they face. Like it or not, they continue to look to the developed world, particularly the United States, for inspiration and assistance.

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, According to the current national security strategy (NSS), the Clinton administration is committed to "addressing" Africa's "economic, political, social, ethnic and environmental challenges" and has promised to "identify and address the root causes of [African] conflicts and disasters before they erupt."[1] The national military strategy asserts that the two fundamental national military objectives are to "promote long-term stability" and "thwart" aggression.[2] The rhetoric is sound but to date is matched by little tangible accomplishment. Unfortunately for Africa and the United States, an integrated, coherent implementation of the NSS for Africa is lacking at a time when it is needed most. Meanwhile, Africa's problems threaten not only the region but the developed world as well.

In the recent past, subregional instability has resulted in cataclysmic human tragedies such as the genocide in Rwanda in 1993 and 1994. Catastrophes that produce large-scale, egregious suffering will continue to occur in Africa and will likely result in further expensive foreign interventions.

Government reform, sustainable economic development, preservation of the natural environment, and regional cooperation, all goals of the current NSS, will not be achieved if severe threats to human life in Africa are not seriously addressed. A combined and melded effort of "preventive diplomacy"[3] and "preventive defense"[4] by the United States could be particularly instrumental in assisting Africans to withdraw their continent from the status of a humanitarian theme park.

The United States has the resources and the ability to assist in attenuating many of the most severe African problems, and other countries are looking to the United States for leadership in such efforts. To date, the missing ingredients are leadership and vision, attributes that should characterize the world's remaining superpower. The United States should now implement a NSS that coordinates programs of developed nations to assist Africans in attacking the conditions threatening regional stability.

A DEPARTMENT OF DEFENSE ROLE?

Effective implementation of a National Security Strategy for Africa would combine "preventive diplomacy," as discussed by Lund and Stedman, with "preventive defense," as discussed by former Secretary of Defense William Perry. Preventive diplomacy involves efforts to forestall civil wars and conflict by early intervention, with concerted action to resolve, manage, or contain disputes before they become violent.[5] Lund, among others, argues that it is feasible to predict state collapse and conflict and that we ignore the warning signs and delay intervention at our own peril.[6]

Perry, in a landmark 1996 speech, argued that the post-Cold War era has seen a worldwide decrease in the sense of personal safety and an increased capacity of humankind for good and for evil.[7] He suggested that preventive defense is analogous to preventive medicine. "Preventive medicine creates the conditions which support health, making disease less likely and surgery unnecessary."[8]

While few would contend that the Department of Defense is the only U.S. Government agency appropriate to address African problems, it can play an enormously beneficial role. DOD programs in Africa historically have been very modest in scope and have been scaled back in the wake of post-Cold War budget cuts and military downsizing. Even so, U.S. preventive defense missions in the 1990s, such as military medical assistance missions, have greatly benefitted Africans and significantly advanced U.S. interests, but these efforts have fallen short of their potential.

DOD activities in foreign countries are implemented by the U.S. Regional Commands—military organizations commanded by senior generals, each responsible for pursuing U.S. military interests over vast areas of the earth's surface. Responsibility for DOD activity in Africa is divided among four such commands.

The headquarters of these commands are staffed by competent, dedicated professionals. However, except in times of major crisis, African issues are not a central focus of any of the four organizations. This results in DOD relations with African countries that appear to be inconsistent and haphazard, driven more by the

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clout of local U.S. diplomats, convenience, and crisis than by any overarching plan.

But, if such an overarching long-term regional plan were to exist, what sort of DOD activities would it embrace? Certainly it would not include significant increases in military funding or material for African armies. No U.S. troops currently are based in Africa, a situation likely to continue. However, military medical missions in the form of MEDFLAG exercises, which feature a wide array of medical activities in sub-Saharan Africa, have proven to be operational, strategic, and political success stories.[9] They are the single best means of conducting the kind of melded preventive diplomacy and preventive defense program that is needed to implement the NSS in Africa today. They could form the template and centerpiece of DOD activities in Africa.

If the United States will not face the implications of its own NSS for sub-Saharan Africa, it will find itself on the horns of a substantial dilemma: "Pay a little now or pay a lot later." Recent history suggests that U.S. policymakers will not resist domestic and international pressures for intervention to resolve African humanitarian emergencies, but these may require commitments of forces on a scale that could significantly impair the U.S. ability to respond to other major crises.[10]

AFRICAN THREATS ASSESSED

No strategy is viable without a rough balance among ends, ways, and means. The ends in this case are relatively clear. Ways and means require more definition and must be preceded by a quick overview of "threats."

Stability of African societies is undermined by a variety of factors, some of which are threats to the very survival of members. Any population that must necessarily focus on individual survival has precious little time to devote to the well-being of larger communities. By the same token, national coherence depends in great degree on a government's ability to assist the population in countering such threats.

Most threats to stability in Africa can be grouped into four general categories: disease, economic distress/localized over-population/urbanization, environmental degradation, and governmental incapacity. These categories are significantly interconnected, producing a synergy of negative effects.

Disease

The African diseases most threatening to Africans and of most concern to the developed world are in four categories:

- Human Immunodeficiency Virus (HIV) and the active symptom complex of infection with HIV called AIDS (acquired immunodeficiency syndrome)
- Ebola-Zaire and other hemorrhagic fever-causing viruses
- Drug resistant and lethal strains of prevalent diseases such as tuberculosis and malaria
- Preventable epidemic diseases such as measles and infectious diarrhea caused by typhoid or cholera.

It is difficult to overstate the impact of disease on life in Africa. Of all the world's populations, Africans have the least chance of survival to age five. After that, the diseases and the effects of poor diets and other health threats in the environment take a serious toll. If fortunate enough to make it to adulthood, Africans are the least likely of the world's peoples to live beyond age fifty.[11] The diseases to be discussed are among the primary reasons for this depressing statistic.

HIV is a pandemic killer without a cure, and viruses such as Ebola-Zaire are merely a plane ride away from the population centers of the developed world. Viruses like ebola, which are endemic to Africa, have the potential to inflict morbidity and mortality on a scale not seen in the world since the Black Plague epidemics of medieval Europe (which killed a full quarter of Europe's population in the 13th and 14th centuries.)[12] These diseases are not merely African problems; they present a real threat to

mankind and should be taken every bit as seriously as the concern for deliberate use of weapons of mass destruction.

The pandemic HIV, believed to have originated in Africa in the late 1960s, is recognized as universally fatal. Since 1983, when HIV was first documented, more than 16 million men, women, and children in Africa have become infected with the virus, constituting over two-thirds of recorded cases in the world.[13]

Hiroshi Nakajima, director-general of the World Health Organization, stated that if the present infection rates continue, by the year 2000 there will 24 million sub-Saharan Africans infected with the virus, accounting for nearly one-half of the cases in the world.[14] In Malawi, one-eighth of the sexually active population currently is infected. In Malawi's urban areas, one out of three women attending antenatal clinics carries the virus.[15] In Uganda, the current average life span is 59, but by 2005 it will drop to 32.[16] In the countries located in the "AIDS belt," nearly 25 percent of the urban population is HIV-positive.[17]

The epidemic has profound economic and social implications. Economists calculate that by the year 2005, the subcontinent will lose from 15 to 20 percent of the gross domestic product (GDP) as a direct result of AIDS.[18] Current analysis suggests that the demands for health care in the subcontinent will increase by up to 16 percent over the next 6 years.[19] Health care workers also are vulnerable to the disease, with infection rates now up to 25 deaths per 1,000 in 5 years. This has resulted in a marked increase in health care worker absenteeism, currently recorded as 16 percent. [20] The impact of HIV infection on health care providers constitutes a significant constraint on an already inadequate medical infrastructure.

Unlike Western developed countries, in which homosexual intercourse and IV drug use are the primary methods of transmission, heterosexual transmission appears to be the primary cause in Africa.[21] The disease is not confined to marginalized subgroups in the general population, which means there are cultural obstacles and difficult behavioral ramifications inherent in any effort to arrest the spread of the disease. [22]

Ebola-Zaire virus, first discovered in 1976, is the stereotype of the virulent, almost invulnerable "Hot-Zone" virus. It strikes with great suddenness and lethality, then disappears until the next outbreak. At the very least, in each of the four recorded mass outbreaks, the 90 percent death rate is a stark reminder of the vulnerability of the human species.[23] No one yet knows where the virus resides in nature, how the human epidemics get started, or why they are so rare. In the recorded outbreaks in Zaire and the Sudan, flu-like symptoms typically appear within 3 days of infection, and death soon occurs from generalized organ failure preceded by a hemorrhagic diathesis from every orifice. In its present form, ebola is unlikely to become a world pandemic disease because of its means of spread (by infected secretions) and its extreme sensitivity to ultraviolet light. However, given a simple alteration to its genetic structure to provide for more protection during transmission, it could become a threat of global proportions.

This virus serves to spotlight the very real horrors that epidemic and pandemic diseases can easily produce in today's interconnected world. A genetically altered ebola virus could be utilized as biological weapons with cataclysmic lethality. Others, like Marburg virus and Congo-Crimean hemmorrhagic fever virus, all require further investigation and research. These diseases are sufficiently threatening now to warrant an aggressive surveillance program and an expanded capability for isolation and containment of further outbreaks.

In contemporary sub-Saharan Africa, both tuberculosis and malaria are undergoing a resurgence in total incidence and lethality, because of emerging strains highly resistant to current drug therapies, the spread of vectors, declining health care services, and cutbacks in government services as a result of "structural adjustment." The spread of the anopheles mosquito (the vector for malaria) into new areas of Africa has been associated with a rise in cases and mortality.[24]

Tuberculosis (TB), a disease that has been present from antiquity, remains the world's leading single infectious killer of adults.[25] About 2 billion people, approximately one-half the world's

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population, are believed to be infected. About 10 percent is at risk for developing active disease, and 1 percent is killed from the disease.[26] Initially an infection of the respiratory tract, TB is transmitted by human microdroplets expelled into the air, which are then inhaled by others. The conditions of crowding and generalized poor health, which make infection more likely, are an obvious correlate of poverty and urbanization. TB in Africa has demonstrated new and highly resistant strains to common drug regimens, making it more contagious and more lethal.

Overcrowding and poor sanitation, conditions prevalent in urban Africa, also provide ideal conditions for diseases such as typhoid, cholera, and measles. Both typhoid and cholera appear in situations where drinking water is contaminated with human waste. Measles, a highly contagious viral infection easily prevented by vaccine, along with infectious diarrhea, appear frequently in mass refugee situations. Combined with dehydration and malnutrition, they are the most common cause of refugee deaths.

A society's confidence in its national government can become strained as a result of the psychological effect of the rising incidence of morbidity and mortality from all these diseases. This is particularly true in Africa, where disease epidemics often are considered to be evidence of spiritual deficiencies of leaders.[27] Present trends suggest not only that future epidemics in Africa will be ever larger and more virulent, but that national governments will be even less prepared to cope with the problems.

Programs sponsored by the United States that work with African nations to conduct research and disease surveillance are few and underfunded. Since 1952, the U.S. Army has maintained an active investigation of malaria in Kenya, which has supported Kenyan education and active disease research. It has provided current field data on the best methods of disease prophylaxsis for soldiers deploying into endemic malarial regions.[28]

The lack of U.S. engagement in Africa in this arena is puzzling. Africans in general are very receptive to assistance that improves their health. Few private sector agencies in developed countries have the vision or resources to establish such programs in Africa.

For minimum protection of the U.S. homeland itself from likely threats, the United States should expand its efforts to include new research centers located in each subregion of sub-Saharan Africa. Centers must, of course, conduct disease research and education cooperatively with the host nation. Additionally, these programs should mobilize and interconnect existing programs and be expanded to include disease surveillance, isolation and containment.

Disease Research, Surveillance, Isolation and Containment Centers (DRSICC) could incorporate U.S. efforts from Department of Defense, Center for Disease Control (CDC), nongovernmental programs, and private volunteer efforts together with the World Health Organization and indigenous scientists approved by appropriate regional organizations. A cooperative effort at this level would not only directly benefit Africans, but would provide the multinational commitment to disease research and surveillance needed to defend actively against the pandemic threats that exist today and will arise tomorrow. Africa is the most prolific "petri dish" of human biological catastrophes on earth, and therefore the very place (in cooperation with Africans) to initiate large-scale research and surveillance to diminish these threats.

The United States itself must have the requisite "line of defense" to stay abreast of newly emerging diseases and disease mutations. A laboratory capability to monitor disease threats could greatly increase the U.S. ability to protect against deliberate use of biological agents as weapons.[29] Containment of the diseases that threaten Africans today, through the development of prophylaxes and cures, is a means of ensuring that the United States maintains the scientific edge necessary to have an effective "defensive countermeasure" to biological threats from weapons or natural sources.

The Overpopulation and Urbanization Factors

Stability in many parts of Africa is threatened by poverty, rapid population growth, and urbanization. During the last 25 years, annual growth rates of 2.5 to 3.5 percent have caused the population of sub-Saharan Africa to double; at the current rate of increase it will double again in 25 years. [30] An increase of this magnitude in such a

short period of time indicates an escalating proportion of children in the population, and thus an increased burden on those who must care for them and the social services needed to support them. [31]

Population growth contributes to migrations to urban areas, particularly by adult males, seeking the pleasures reputedly afforded by urban life and hoping to find employment to supplement family income. National economies in Africa have been unable to provide anywhere near the urban employment sufficient to satisfy the needs of job seekers, but the growth of urban populations continues to escalate. In 1965, only 14 percent of Africa's population was urban; by 1990 it was 29 percent and by 2020 it may be 50 percent.[32]

The growth in urban population is accompanied by increasing poverty. The World Bank estimates that between 1985 and the year 2000, the number of persons living in destitution will rise from 185 million to 265 million.[33] A very high proportion of these are Africans. Doerr warns, "Rapid population growth threatens population stability and may contribute to high and increasing levels of child abandonment, juvenile delinquency, chronic and growing unemployment, petty thievery, organized banditry, food riots, separatist movements, communal massacres, revolutionary actions and counterrevolutionary coups."[34]

Doerr, as well as Baker and others, has noted that rapid population growth severely impedes the rate of economic development otherwise attainable. It also stresses the environment in ways that threaten longer term potential for food production, through cultivation of marginal lands and overgrazing. These contribute to desertification, deforestation, and soil erosion, with consequent depletion of soil nutrients, pollution of water, and rapid siltation of reservoirs. Most African nations are not in a position to maintain the infrastructure needed to safeguard the environment or adequately support human needs. Between 1974 and 1994, the subcontinent recorded a 12 percent decline in food production, making it the world's only region of such size unable to feed itself.[35]

The impoverishment of African societies results in another unfortunate situation: many of the most gifted Africans despair of

conditions in their societies and emigrate abroad to apply their skills in developed countries. This drains Africa of many of its best engineers, managers, and medical professionals. The result is a society that lacks the basic services taken for granted in developed countries, especially health care.[36] This situation can be reversed only if talented African professionals are provided sufficient incentive to stay in their countries of origin and more national resources devoted to basic health care.[37]

Overpopulation and urbanization place enormous strain upon already weak government social programs. As noted earlier, stability in Africa is threatened by epidemic and pandemic diseases. These, in turn, are exacerbated by overpopulation and urbanization.

The Fouled Environment

Air, water, and land pollution is increasing throughout rural and urban Africa at an alarming rate. Because of the heavy use of wood and charcoal by Africans for heating and cooking, along with the predominance of substandard industrial equipment and vehicles that have no emission control systems, the region jumped from 2 to 19 percent of the total global carbon dioxide greenhouse emissions in just 4 years, between 1990 and 1994.[38] Air pollution significantly exacerbates existing health problems. High rates of pulmonary disease peak during the cold season, when airborne particulates are at a high level and Africans heat poorly ventilated homes with charcoal. African woodlands rapidly disappear to feed the demand for fuel in urban areas. Very few African countries are committed to reforestation. The long-term implications for both the African and the global ecology are disturbing.

The improper disposal of solid and toxic wastes in and around urban areas is routine. Refuse that is both toxic and infectious is commonly dumped along roadways and into waterways. Water sources are routinely contaminated by typhoid, cholera, and organisms causing diarrhea and dysentery. As previously noted, these preventable diseases are the greatest threats associated with humanitarian disasters and mass refugees.

In some areas, unwise use of pesticides and artificial fertilizers (employed in efforts to increase yields of commercial crops) has created a hazard to human health. The extent of this problem is difficult to measure empirically, but emphasis on development at all costs and lack of effective regulation assure that the problem is likely to get much worse.

Lack of potable water is a serious health threat, particularly in regions that have prolonged dry seasons or are downstream from countries that have built dams on major rivers. In countries from which statistics are available, ready access to water has declined since the 1970s.[39] African countries have placed little emphasis on water purification. With the increasing pollution (primarily from human waste), serious health care crises are routine and naturally result in epidemic outbreaks. These, in turn, erode the fragile health care infrastructure of African countries and overwhelm the limited available health care resources. The end result is a constant "fire fighting" practice of health care, which leaves little energy or resources for attacking the sources of the problem. Availability of water is not the real problem; the issue is the effective management of resources, which also is at the core of another key African dilemma: the competence of national decisionmakers.

Illusory Infrastructure

Western-style government services, including health care, are rare in Africa. In an era of rising expectations and declining opportunity, this is a destabilizing factor. Legitimacy of existing governments is continuously challenged. Absence of basic social services, the prevalence of nepotism and corruption, and lack of instruments for peaceful redress of grievances all promote anger, conflict, and withdrawal.

Since the mid-1980s in Africa, a steady progression of change toward free market economies is apparent, along with more transparency and representativeness in government. This has resulted in some improvement of living conditions, but even the best efforts are dwarfed by the lack of resources and escalating human needs.[40]

African countries also suffer from another problem—poor cooperation among government agencies and between government agencies and civil society. Often, it is difficult for African governments to produce needed cooperation between military and police establishments, or between police and health-care organizations. Weak civil societies cannot furnish the "watchdog" interest groups taken for granted in the West. This all results in slow, poorly coordinated responses to life-threatening emergency situations and much unnecessary suffering. Sometimes this is the result of inept management. Often, it is the result of sheer lack of resources and limited training.

THE INEXTRICABLE LINKAGE OF THE THREATS

Human health problems, environmental problems, poverty, and managerial/infrastructural deficiencies in sub-Saharan Africa all are inextricably linked. These must be addressed if regional stability can be anything more than a dream. Obviously, Africa's problems are deep seated and intractable, and there are few easy or cheap solutions. However, the problems are not insoluble, though some clearly are easier to attack than others. It seems reasonable to assume, given the linkage of many of the worst problems, that significant progress in one area may render others less threatening and may provide previously unanticipated solutions.

EUCOM MEDFLAG EXERCISES: A PRESCRIPTION FOR MULTIPLE ILLS

In 1988 the Joint Chiefs of Staff (JCS) directed that joint U.S. military medical exercises be conducted annually with selected sub-Saharan countries utilizing Title 10 funding. The program was intended to include up to three exercises per year. U.S. European Command (EUCOM) was given proponency for this program, since most of sub-Saharan Africa is part of its area of responsibility. EUCOM named these exercises "MEDFLAGs." The recipient countries are selected by EUCOM, with input from the Department of State and

approval from the JCS. Since 1988, 19 separate missions have been conducted to 16 African countries.

The MEDFLAG exercises are centered around a military-to-military exchange program in which an 80-person U.S. joint (Army, Air Force, and Navy) medical task force deploys to the selected host nation and conducts an exercise lasting up to 3 weeks. Exercise activity includes medical training of the host nation personnel, a disaster response exercise, and a combined (U.S.-host nation) medical civic action assistance program to treat local populations.

Initially these missions were limited in scope and accomplishments. However, as a result of visionary leadership, the three MEDFLAGs conducted in 1994 and 1995 achieved a level of sophistication and complexity that have made them one of the best uses of the military element of national power in sub-Saharan Africa.[41] These three exercises were organized and implemented by a U.S. Army Mobile Army Surgical Hospital (MASH) stationed in Germany. The countries selected for these missions were Ghana and Ivory Coast in west Africa, and Botswana in southern Africa. The basic medical element in each deployment was an Army unit (the MASH), but because these exercises were required to be "joint," they included personnel from Air Force and Navy units. Additionally, medical officers from the NATO allies were invited to participate. The presence of multiple services and of British, Dutch, and German officers made the MEDFLAG organization both a "combined" and "joint" task force (CJTF).

Each of the three MEDFLAGs in 1994 and 1995 followed a very similar pattern. They were preceded by intense discussions among EUCOM representatives, host-nation political and military decisionmakers, U.S. diplomats, and host-nation health-care professionals in the public and private sectors.[42] These consultations determined the interests and health-care needs peculiar to the individual country and obtained the agreement of all parties to a specific plan. They also clearly identified the expected contributions of all participants.[43] The exercise itself started with the deployment of the 80-person U.S. CJTF to the host country. Members of the CJTF would link up with their host-nation counterparts to begin

activities, which were built around a standard format, with modifications to suit local conditions.

The MEDFLAG format included two obvious parts: first was training classes for local personnel in a variety of medical, health-care and disaster-relief skills, leading to a large-scale, mass-casualty exercise; second was the delivery of medical, dental, and surgical care to individual citizens. The latter included a very ambitious immunization program against local disease threats. A less obvious (but much more important) part of the MEDFLAG was the effort to bring together the national/local governments and health-care communities in cooperative relationships that would endure long after the end of the exercise.

The 1994/1995 MEDFLAGs provided services immediately obvious to host nation observers. They provided treatment to thousands of individual citizens and supervised large-scale inoculation programs in areas of ongoing epidemics (yellow fever in Ghana, meningitis in Côte d'Ivoire). They provided health-care training to medical personnel and lay persons in skills that citizens increasingly are demanding from African governments. The mass-casualty exercises were both a highly visible "good show" that people enjoyed and obvious training to prepare for events that commonly occur in Africa. The MEDFLAGs proved to be intensely popular in each country, drawing the enthusiastic attention and involvement of senior political leaders. They also were lavishly and sympathetically covered by local media.[44]

Some of the additional strengths of the exercises were the ability to vary the detail to accommodate individual country needs and to test new technical equipment that could enhance the operational and medical care effectiveness.[45]

MEDFLAGS CONSIDERED:
SOME QUALIFYING OBSERVATIONS

Despite the large number of patients treated and the new skills imparted to host nation personnel, it is evident that a 3-week exercise can have only a very limited direct impact on the overall health-care needs of an entire country. However, the real value of a

MEDFLAG is much more profound: the exercise serves as a catalyst to initiate (or energize) important long-term relationships and programs.

Another important and less obvious aspect of the MEDFLAG is the portrayal of values appropriate to health-care personnel. The U.S. participants were expected to display the competence and self-sacrificing dedication U.S. society expects of the medical profession. By extension, these exercises display an ethic of public service that serves as a challenge for observers to emulate.[46]

MEDFLAGs have demonstrated a highly effective means for cooperating with African governments to improve medical services to the local population. In 1994-95, these missions graphically portrayed an active interest in the well-being of local communities on the part of African national governments, with the host nation military and the local civic leaders providing unprecedented services to the rural population with U.S. assistance.[47]

In each case, participants received valuable training in coordinating local government agencies and in linking the efforts of NGOs and PVOs.[48] This markedly improved the ability of both the U.S. and host nation military medical staff to plan for cooperative future efforts. MEDFLAGs demonstrated on a national scale what might be achieved by similar cooperative efforts involving entire subregions.

U.S. diplomats in Africa recognized the obvious increase in U.S.-host nation interactions that resulted from these missions, which served to strengthen political ties;[49] this should not be surprising. U.S. military officers with extensive African experience expressed their astonishment at the success of military medical operations in providing access to senior decisionmakers. They strongly believe that such operations significantly reduce African suspicions of U.S. regional motives and increase the willingness of African leaders to cooperate with the United States in other ways.[50] In short, MEDFLAGs have proven to be an ideal template for future U.S. military operations, medical or otherwise, in sub-Saharan Africa.

A number of authorities have questioned the wisdom of employing U.S. military forces on a large scale in military operations

other than war (MOOTW). They argue that such usage degrades the ability of the U.S. military establishment to perform its primary mission: to fight and win the nation's wars.[51] While this argument may have merit when applied to the combat maneuver forces, it manifestly is not true of the MEDFLAGs.

Each MEDFLAG exercise provided excellent training to U.S. personnel. Each emphasized numerous essential individual and collective wartime tasks. MEDFLAGs tested combined and joint task force operations for all levels of U.S. command from theater level to the small dental and preventive medicine detachments that were attached to the CJTF. As a result of the MEDFLAGs, MASH combat readiness was directly and measurably improved at the individual soldier and unit level. The three missions in Africa in 1994-95 contributed directly to the highly commendable performance of the MASH in supporting the U.S. forces that deployed to Bosnia in December of 1995.[52]

The United States and the region could reap far more benefit from a long-range program featuring recurring MEDFLAG exercises in consonance with a coherent plan to address specific U.S. subregional objectives. Unfortunately, exercises like those conducted in 1994-95 have not been repeated.[53] This is largely attributable to the recent preoccupation of EUCOM, the sponsoring command, with events in the Balkans and requirements in Eastern Europe.

THE ROAD AHEAD:
A PRESCRIPTION FOR SUCCESS

African societies suffer from many problems, including severe threats to health, which severely undermine regional stability. The problems and their "cures" are recognized by U.S. policymakers. Little agreement, however, is apparent over responsibility for addressing the problems. It has been argued that the United States has no vital interests in Africa and that taxpayer dollars should not be spent merely to assuage humanitarian impulses. However, the National Security Strategy asserts (and this paper has endeavored

to demonstrate) that attenuation of African problems can realize fundamental American interests.

. The amalgamation of Preventive Defense and Preventive Diplomacy into an overarching program to implement the current NSS is a profoundly appropriate prescription for U.S. intervention in sub-Saharan Africa. It should contain sufficient flexibility to adjust to subregional conditions. Such a program should have, as a key, the formulation of cooperative U.S.-host nation programs that can systematically improve host nations' abilities to manage the threats themselves. However, the recent increase in "human condition" threats must be addressed first, since concerns for economic growth and government reform are secondary to a struggle for survival. MEDFLAG exercises have provided a good model of how this can be done.

The Department of Defense should alter the current reactive approach to engagement and enlargement in sub-Saharan Africa. The following DOD initiatives should be undertaken now:

- As a matter of "homeland defense," the United States must increase disease surveillance and research in Africa and elsewhere in the developing world. The basic capability currently exists in DOD, though it is limited. An expanded capability must include cooperative efforts with African nations that emphasize outbreak isolation and containment. This action will directly assist African nations in attenuating disease threats and allow them to build the capabilities to provide their own containment and control programs for the future. Research and surveillance clinics, staffed by U.S. and host nation personnel, should be established in each of the four major subregions of the subcontinent (east, west, central and south). It is worth noting that these activities will afford the United States an enhanced capability to deal not only with "acts of nature" but also with deliberate uses of biological weapons by a future enemy.

- Increasing national disease surveillance efforts should be linked with an increase in exercises of the scope and capability of the 1994/1995 MEDFLAG series. Such exercises should focus

on education and training to improve disease prevention, hygiene, public sanitation, disease vector control methods, disaster management, and medical expertise for cases of mass refugees. Medical civic action projects must focus on assisting the host nation in projecting and stabilizing the medical infrastructure and medical care capability within the areas of greatest need. MEDFLAGs can better prepare U.S. military units and higher commands for more rapid response requirements such as disaster relief. The additional benefit of having worked with and trained numerous African personnel could facilitate the rapid inclusion of trained African medical personnel in future disaster relief operations in Africa and elsewhere in the world.

● Although creating a regional African command is admittedly a complex and problematic issue, the Department of Defense must have a regional command that can provide a full-time focus on Africa. As noted earlier, the African continental land mass falls under the responsibility of two U.S. military commands (EUCOM and the U.S. Central Command), whose primary focus in each case is elsewhere. Islands surrounding the continent fall under the purview of other commands. In times of crisis in Europe, EUCOM cannot devote the necessary attention to the 38 African countries within its area of responsibility.

A failure to implement these changes will, at a minimum, ensure that larger and less well prepared forces must be rapidly deployed into the next African humanitarian disaster. Instituting these recommendations provides no guarantee that complex humanitarian emergencies in Africa will be avoided; however, it is likely that the frequency, cost, and magnitude of the subsequent interventions would be less. Ultimately these actions by DOD would expand African nations' capabilities for assuming greater responsibility in African disasters.

The United States stands at the brink of an era in which, with great vision and minimal additional expenditure of resources, it can

profoundly affect the well-being of a huge area of the world. It is clearly in the national interest to do so. History is scathingly unkind to those who fail to rise to the challenges of their generation.

NOTES

1. "A National Security Strategy of Engagement and Enlargement February 1996" (Washington: U.S. Government Printing Office, 1996), 43.

2. Joint Chiefs of Staff, "National Military Strategy of the United States of America 1995: A Strategy of Flexible and Selective Engagement" (Washington: Joint Chiefs of Staff, 1995), 4-5.

3. Michael S. Lund, "Underrating Preventive Diplomacy," *Foreign Affairs* 74, no. 4 (July/August 1995): 160-163.

4. William J. Perry, "Fulfilling the Role of Preventive Defense," *DOD Speech File Service* (1997): 7-13.

5. Lund, 161. Preventive diplomacy accommodates the effects of poverty, environmental degradation, inadequate government infra-structure, disease threats, and other factors that increase the likelihood of conflict.

6. Stephen John Stedman, "Alchemy for a New World Order," *Foreign Affairs* 74, no. 3 (May/June 1995): 14-20. Stedman argues that the costs of carrying out this type of diplomacy are prohibitive. However, he does not consider all of the aspects of preventive diplomacy. He does not seem to agree that less violent and short-lived disputes offer much greater opportunities for peaceful management by mediators.

7. Perry, 7.

8. Ibid.

9. U.S. European Command, "USEUCOM MEDFLAG Exercises," an unclassified report February 25, 1997, from the USEUCOM Surgeon's office, Stuttgart, Germany. This document provides the historical background and origin of the MEDFLAGs.

10. This subject warrants careful consideration in the 1997 DOD Quadrennial Defense Review. A more focused DOD Africa program is currently being crafted in the Office of the Secretary of Defense under the management of Mr. Vince Kern and Dr. Nancy Walker. This is a very positive development and should be emulated in a coordinated national-level effort.

11. Keith Richburg, "The Same Old Excuses," *U.S. News and World Report* , February 3, 1997, 36-38.

12.   Geoffrey Cowley, Joseph Contreras, Adam Rogers, Jennifer Lach, Christopher Dickey and Sudarsan Raghavan, "Outbreak of Fear," *Newsweek* May 22, 1995, 48-55.

13. John C. Caldwell and Pat Caldwell, "The African AIDS Epidemic," *Scientific American* 274, no. 3 (March 1996): 62-68.

14. "Africa for Africans," *The Economist* 340, no. 7982 (7 September 1996): 1-18.

15. Ibid.,16.

16. Ibid.

17. Caldwell et al., 64.

18. Ibid.

19. "Impact of HIV on the delivery of health care in sub-Saharan Africa: A tale of secrecy and inertia," *The Lancet* 345, no. 8961 (May 1995): 1315-1317.

20. Ibid., 1316.

21. Ibid., 62.

22. Caldwell et al., 68. These authors believe that the best chances for combating AIDS everywhere lie in targeting education and prevention programs at high risk groups. The number of AIDS cases has essentially grown unabated despite educational and financial assistance by the United Nations, nongovernmental organizations and private voluntary organizations. New approaches and additional efforts are needed.

23. Shannon Brownlee, Eric Ransdell, Traci Watson, Fred Coleman and Viva Hardigg, "Horror in the Hot Zone," *U.S. News and World Report*, May 22, 1995, 57-60.

24. "Africa for Africans," 15.

25. Lynn W. Kitchen, "AIDS Revisited," *CSIS Africa Notes*, no. 146 (March 1993).

26. Ibid., 2.

27. Colonel Dan Henk, interview by author, April 11, 1997, Carlisle, Pennsylvania. Henk is a cultural anthropologist with extensive African experience who served as a U.S. Defense Attaché in Botswana, Tanzania, Zambia, and Zimbabwe.

28. Other developed nations, the World Health Organization, some private foundations, and some academic institutions maintain similar small-scale programs, but these efforts are also underfunded and not mutually supporting and fall far short of the requirement necessary to meet the current African disease threats.

29. This is particularly true since biological weapon effectiveness is contingent upon stability of the contagion, easy transmissibility to the

human host, and rapid morbidity and mortality (all conditions which currently exist in Africa).

30. World Bank, *World Development Report 1992* (New York: Oxford University Press, 1992), 258-59.

31. Some 40 percent of the total African population is currently under the age of 15. Yvette Collymore, "Short Shrift for Africa," *Africa Report* 39, no. 6 (November-December 1994): 42-46. Interestingly, a destabilizing factor in many African countries is popular discontent over the lack of educational opportunity for children. Henk, interview, April 12, 1997. Henk points out that the problem is compounded in African countries which produce large numbers of primary and secondary school graduates who cannot find employment in the formal economic sector.

32. Akin L. Mabogunje, "The Environment Challenges in Sub-Saharan Africa," *Environment* 37, no. 4 (May 1995): 4-35.

33. World Bank, *World Development Report 1990* (New York: Oxford University Press, 1990), 139.

34. Edd Doerr, "Curbing Population: An Opportunity Missed," *USA Today* 123, no. 2590, January 1995, 36-37.

35. "Africa for Africans," 8.

36. Gerard Piel,"Worldwide Development or Population Explosion: Our Choice," *Challenge* 38, no. 4 (July/August 1995): 13-22. Piel argues that the problem is not overpopulation per se, but the fact that the majority of this population is impoverished with little hope of amelioration in the foreseeable future. The disparity between the "haves" and the "have nots" is expanding globally, and in no place more profoundly than in Africa. This situation further serves to stress the population and creates a sense of disenfranchisement from the national government. Further, it creates the potential for conflict along class, ethnic or religious lines as people mobilize to compete for diminishing resources.

37. Ironically, a factor in Africa that draws rural people to urban centers is the expectation of better access to health care. Unfortunately, rapid urbanization is occurring at the same time that health care access is diminishing, which fuels popular discontent. Piel argues that to stabilize the world's population at a sustainable level, the industrial revolution must be carried out world wide. This would require the coherent, large-scale assistance of the developed world. He estimates that the total capital outlay required for such a task would be $19 billion dollars per year, with decrements in that amount as development escalates in the underdeveloped nations. Piel, 14.

38. Mabogunje, 9.

39. U.N. Development Programme, Environment & Natural Resources Group, "The Urban Environment in Developing Countries" (New York: United Nations, 1992), 29. Another author points out that, while fresh water utilization for agriculture irrigation accounts for nearly 90 percent of the total consumption, only 37 percent of the water used for irrigation is actually absorbed by crops. The rest is lost to evaporation, seepage or runoff. The value of fresh water continues to rise. Kent Hughes Butts, "The Strategic Importance of Water", *Parameters* 27, no. 1 (Spring 1997): 65-83.

40. "Africa for Africans," 17. National priorities warrant continued rethinking. For instance, nearly all the current governments of sub-Saharan Africa continue to spend more GDP per annum on defense than they do on health care.

41. These three MEDFLAGs were organized and implemented by the 212th Mobile Army Surgical Hospital (MASH) headquartered in Wiesbaden, Germany.

42. The latter included local community leaders and nongovernmental and private voluntary organizations (NGOs/PVOs).

43. A very important objective of the coordination was to reassure host country leaders that the MEDFLAG exercise was to be a genuine partnership with no hidden agenda.

44. For instance, the Botswana National Press characterized the 1995 MEDFLAG as a "monumental program for success."

45. For example, at the host nation's request, the Botswana MEDFLAG included a U.S. veterinary team to assess the health of local cattle herds and the sanitation of meat processing facilities. The Côte d'Ivoire MEDFLAG featured the use of "telemedicine" for medical and surgical care assistance provided via near-real-time video link through a satellite connection to specialists in Landstuhl Regional Army Medical Center in Germany.

46. Henk, interview with author, April 11, 1997. Henk provides an anecdote that illustrates the importance of this MEDFLAG service. In the late 1980's, missionary medical personnel in southern Zaire began to encounter numbers of local citizens seeking care for complications associated with appendectomies. Because appendicitis is relatively rare in the region, this was puzzling. However, informal investigation soon got to the bottom of the mystery. Poorly paid government doctors were falsely diagnosing this malady in order to convince their countrymen to undergo an expensive—but unneccessary—operation.

47. This advantage was not lost on host nation leaders. In his farewell address to the 1994 MEDFLAG, the Ghanaian Vice President publicly

requested another at the earliest opportunity.

48.   Interestingly, as the commander of the MEDFLAG in both Ghana and the Ivory Coast, I noted that a number of the participating private voluntary organizations' personnel confessed to having changed previous negative attitudes about military establishments as a result of the exercise.

49.   The U.S. Ambassador to Ghana in 1994, the honorable Kenneth Brown, stated that the MEDFLAG mission to Ghana was the best example of U.S. engagement in sub-Saharan Africa that he had encountered in his many years of foreign service experience in the region.

50.   Henk, interview; and Anthony Marley, interview with author, April 9, 1997, Carlisle, PA. In a very colorful career, former military officer Marley served in Cameroon and Liberia and as a U.S. negotiator mediating among competing sides in the civil war in Rwanda (1993-94).

51.   Charles J. Dunlop, Jr., "The Military Coup of 2012," *Parameters* 2, no. 4 (Winter 1992/1993): 2-20. Dunlop develops a hypothetical scenario which proposes the most graphic potential outcome of U.S. military readiness degradation due to numerous humanitarian operations: a military coup.

52.   This is the author's opinion, having served as the commander of the 212th MASH from July 1993 to July 1995 and commanded the MEDFLAG missions to Ghana and Côte d'Ivoire. Followup discussions with several of the officers who served on multiple MEDFLAGS with the 212th and subsequently deployed to Bosnia have validated this opinion.

53.   Much smaller scale medical exercises conducted in Africa by EUCOM units and special operations forces have continued. However, while of benefit to recipient countries, programming of these exercises does not fit a comprehensive, long-range U.S. national plan. Nor do these exercises offer the substantial benefits evident in the 1994/1995 MEDFLAGS.

4

FRACTURED SYNTHESIS

THE MILITARY'S ENCOUNTER
WITH POSTMODERNISM

GREGORY KAUFMANN

Those who have the germ of leadership would develop it badly if they applied themselves solely to military subjects. Power of mind implies a versatility that one does not obtain through exclusive practice of one's profession....The real school of leadership is therefore general culture. Through it the mind learns to act in orderly fashion to distinguish the essential from the trivial, to recognize developments and causes of interference, in short, to educate itself to a level where the whole can be appreciated without prejudice to the shades of difference within it.

General Charles DeGaulle[1]

IN 1990, FRED REED, A POPULAR COLUMNIST FOR THE *ARMY TIMES*, assaulted the curriculum at the U.S. Military Academy at West Point. He examined the strong tendency toward linear thinking that the curriculum engenders in cadets with its emphasis on science, mathematics, and engineering (SM&E).[2] Reed cited a study

Lieutenant Colonel Gregory Kaufmann, USA, wrote this essay while attending the Industrial College of the Armed Forces. It won recognition as a Distinguished Essay in the 1997 Chairman of the Joint Chiefs of Staff Strategy Essay Competition.

by an Army officer stating that "logical, serial, orderly thinking" has nothing to do with warfare. Reed agreed with this statement and opined that the decisions made in the chaos of combat will be "almost the exact opposite of scientific thinking." Reed concluded, "You don't train for chaos in a laboratory."

Well, of course, the whole tone of this column is one of gross simplification. There is, however, a large measure of truth in his negative assessment of a predominantly SM&E education for military officers. This assessment is seconded by John Lehman, Secretary of the Navy in the Reagan administration.[3] He blames the Rickover legacy with its emphasis on engineering education for the lack of strategy in the Navy of the seventies. Lehman, who acknowledges there were theater plans but reiterates there was "no overall strategy" during this time period, concludes, "The ability to articulate strategy requires considerably more intellectual depth than mere sciences and engineering can impart." There is an implicit endorsement here that a strong grounding in interdisciplinary studies—a term subsuming both the humanities and the social sciences for our purposes—is necessary for dealing with the variables of decisionmaking on any level.

Of course, the need for something more than mere formulae lies at the heart of DeGaulle's comment. As he states, a solid grounding in general culture is needed in addition to the usually formulaic, mechanistic approaches characterizing military thought. There is much in the historical literature of military thought that drives at mathematical schemes of victory. Force ratios, battlefield geometry, and logistical mass are just some of the areas subjected to such analysis over the years. But, DeGaulle's timeless remark strikes at the very core reason why general culture, traditionally learned through experience and the interdisciplinary liberal arts, is important today, even more so than scientific wizardry. In a world that every military and civilian pundit characterizes as ambiguous, or uncertain or ill-defined, it is imperative that leaders have the knowledge and ability to appreciate the whole "without prejudice to the shades of difference within it." In the unpredictable world of the future, based on projections for a growing number of military

operations other than war (MOOTW) in which our soldiers increasingly experience at the personal level different cultures, mores, and beliefs, a knowledge of general culture will be imperative, especially for the leaders of those soldiers.

Yet, in many ways, not only are our future leaders not being equipped with the proper tools for engaging these many foreign cultures, but they are also often not prepared for the impact of *American* culture on their units, their organizations, their services. The children born to parents who participated in the Vietnam-era, nation-wrenching turmoil directed at institutions of "authority" are populating the services at all levels of entry. These personnel are not of the modernist ilk; indeed, the rational, scientific certainty that characterizes modernity, the drive for structure and order, is not generally part of these service members' culture. The reason: the diminished authority, growing freedoms, and individual autonomy championed by their parents have been translated into a postmodernist ethos in which there is no certainty, the consequences of an individual's actions are entirely situational, and social experience is fragmented. A contentious outgrowth of this philosophy is that "meaning" cannot be established for anything; words and actions are indeterminate. The entire traditional cultural framework of modernism is thrown into disarray. Yet, within the traditional military community—which still espouses modernism—there is scant recognition of this bedrock shift in the values and culture of incoming personnel.

Postmodernism as a dominant cultural aspect in American society today largely owes its existence to academe, especially literature and philosophy departments. These departments were the first to import the various European philosophies of structuralism, poststructuralism, and most notably, deconstruction. Taken together, these movements have permeated society under the moniker of postmodernism. It is this environment within which current young service members were raised and indoctrinated. Military leaders today are challenged in connecting to the life experiences of these Americans, much less worrying about foreign

cultures. But this American cultural reality is ignored at great risk by the military establishment.

Postmodernism is about diversity—its acceptance, under-standing, and accommodation. The multicultural movement in the United States is closely tied to postmodernism, and there are emergent threads of postmodernist handling in almost all other academic fields. The irony is that at the same time postmodernism is generally seen as a threat to traditional American values, an ability to understand and deal with postmodernism also opens up possibilities for leaders to deal with the nontraditional cultures and customs of foreign nations. The postmodernist fragmentation of reality in American society mimics the bewildering cultural outlooks encountered on deployments. Understanding postmodernism and culture is critical to the future effectiveness of military leaders.

But a predominantly SM&E education in precommissioning programs or an SM&E orientation in commissioned leaders will not arm them with the mental agility everyone claims will be needed in the future. A true interdisciplinary education will provide leaders the flexibility needed to handle the many future challenges they face. This aspect of professional military education (PME), while not ignored, is not given the emphasis it deserves based on the level of rhetoric about future challenges to our forces. Engagement with general culture is a necessary and critical element for our future leaders' success. It demands greater attention and accommodation in the PME system.

THE EDUCATIONAL DILEMMA

The PME system of the Armed Forces is a well-developed, robust network of schools that provides military schooling at the three levels of war: tactical, operational, and strategic. Precommissioning sources—military academies, reserve officer training corps, and officer candidate schools—are deliberately managed to maintain the required officer corps density and impart initial service knowledge. In all cases, there is an appropriate focus on required military art and science. However, there is the physics of time associated with these schools, as with any event. The need to impart certain,

mandated material in a finite timeframe directs tradeoffs between subject areas. Unfortunately, the area of DeGaulle's "general culture" does not make the cut as a discrete area of study. Yet, much of our professional literature and pronouncements indicates that a person's ability to meet the future challenges will depend on skills largely developed through the study of culture.

Speaking in 1996 on the critique of PME by parties looking to cut more dollars from the defense budget, the Under Secretary of Defense (Personnel and Readiness) asked, "How can military leaders best be prepared to protect our interests in an unpredictable and dangerous world?"[4] In his answer, he relates an interview he had with Major General Nash and his senior commanders in Bosnia. Their answer included benefits gained from their formal schooling, which allowed them to develop a facility "for taking a mass of information, processing it in an orderly fashion, applying a healthy dose of skepticism, and making sense of it—that is, thinking critically." Of course, in this situation, warfighting information is important; however, even more so, cultural dynamics and information are key. Dorn goes on to state that if PME is done well, it "should provide an understanding of this nation's place and role in this messy world; instill critical thinking skills; and equip leaders to cope with diversity."

In *JV 2010,* new operational concepts are developed to enhance joint warfighting. Upon whom will the implementation of these concepts depend? It will depend upon dedicated, high quality people, with "an intellectual ability to cope with the complexity and rapid pace of future joint operations."[5] Indeed, these personnel "will require a sophisticated understanding of historical context and communication skills to succeed in the future."[6] Given the demands of this requirement, *JV 2010* goes on to identify the requisite organizational climate: "reward critical thinking, foster the competition of ideas, and reduce structural or cultural barriers to innovation."[7]

In a particularly insightful examination of future leader requirements, Colonel David Price identifies five critical areas of future concern in training leaders.[8] In four of these five areas, an

ability to understand and operate within various cultural contexts pertains. Most pointedly, in addressing the preparation required for noncombat roles, he states, "Successful leaders will be able to relate to diverse cultural elements within their commands as well as deal directly with people in the region whose language and culture differ from our own." Interestingly enough, he advocates selecting individuals who "have the capacity to grow and become gifted generalists"; future leaders "will need an unprecedented wealth of generalist skills and a broad base of widely applicable experience."[9] This endorsement of generalist skills, while encouraging, will require some basic philosophical shifts in how career advancement is achieved in the services.

For example, in the Army it is common knowledge that being the best aviator or best cannoneer while remaining in a warfighting assignment track is the assured road to promotion. Diverting to such assignments as school instructor, or to agencies other than the Army Staff, diminishes, though admittedly does not extinguish, the possibilities for promotion and command. Yet these often are the very assignments that provide the opportunity to expand one's intellectual development, to learn about cross-cultural issues. Yet the system continues to send the signal that these assignments serve no useful purpose; indeed, these jobs hinder career progression. Martin van Creveld drives at this in his assessment of faculty assignments at the staff college and war college levels of PME. In a rather scathing position, he claims that faculty at war colleges, "consists of officers whose military career is at an end." And he is no kinder with the faculty of staff colleges.[10]

There is a clear thread in these various documents that place the engagement of culture directly at the heart of our future leadership challenges. Notice the various descriptions and attributes that attend many of these statements: coping with diversity; competition of ideas; reduction of structural or cultural barriers to innovation; cross-cultural skills; intellectual ability to cope with complexity; and a broad base of widely applicable experience. Ironically, these documents not only point to this need for a cultural context in

regards to other nations and groups; they also emphasize the need to engage culturally the very personnel who will work in their units!

There is a very subtle shift in cultural focus toward a more domestic aspect at work here. Looking back, a person could point to peaks on a continuum marking where significant institutional change was heralded and enacted. Racial and gender equality, as well as equal opportunity in various workplace sectors, seems commonplace. These issues are easy to see, to feel, to report. But underlying all of this public social progress, a more drastic cultural shift has been occurring. The philosophy of postmodernism has been propagated in academe and more liberal public institutions, and it continues today. The institutional military faces both challenge and opportunity in its encounter with postmodernism.

POSTMODERNISM FOR THE MILITARY MIND

Postmodernism is a bewildering confluence of philosophical, literary, and social theories that grew out of disillusionment with modernism. Interpretation of language, the bestowing of meaning, and the representation of reality were first engaged in the language and linguistic communities using, of course, their own specific terms of discourse. The awkwardness of their language is where the disillusionment with engaging postmodernism usually starts. A point of clarification: Everyone can agree that we are in a modern age; perhaps, given the shift from an industrial production focus to an informational production focus, most people can even admit to being in a postmodern age. However, there is no commonality between the timeframe in which we find ourselves and the philosophical frameworks promoted under the rubric of modernism and postmodernism. For our purposes here, we will always use the latter terms in their philosophical connotations.

So, exactly what is postmodernism? The table below is an attempt to capture just some of the major, pertinent conceptual differences between modernism and postmodernism.

MODERNISM	POSTMODERNISM
Privileged elite	Marginalized fringe
Objective reality	Subjective construct
Hierarchy	Anarchy
Totalization	Deconstruction
Assimilation	Multiculturalism
Domination	Fragmentation

These conceptual classifications are just some of the attributes that have been identified in the literature on postmodernism. They represent a somewhat simplistic reduction of quite involved, and at times obtuse, arguments by the opposing camps. Yet, they are specific enough for the examination of postmodernism, and what it means for the military engagement with culture. They are in no particular priority order (very postmodern, that!), and treatment of them will simply proceed down the list.

The first concept listed refers to the dominant discourse group in its respective philosophy. Modernism reflected the discourse of people of the center, those who controlled the political centers from their governing institutions. Arising, now, however, are the voices of those groups and communities that had been marginalized or silenced under modernism—the feminist, racial, or ethnic voices that gain more notice everyday. The moral authority once residing in the single spokesperson of the modernist institution has migrated to those repressed voices now being heard. Concurrently, that same moral authority has also been transferred to the individual. Hence, the public debate over situational ethics and moral relativism. The determinant of the morality of any action is now the individual, with no accounting to a higher authority or a common value system. This development also means that each discrete group or community can also set its own standards of morality and ethics.

The idea of an objective reality, grounded in some absolute measure, has been jettisoned by the postmodernists and replaced with a critical examination of meaning and reality based on a subjective construct involving the communicating parties, the site of

the discourse, and the reason for the communication. This captures the idea that one person's reality is another person's fiction, depending on how the surrounding dynamics of the communicative act are interpreted. Additionally, the ethics of electronic manipulation enter here, wherein the "reality" of a situation is capable of manipulation at the hands of a technician. Such manipulation challenges perceived ideas of objective truth, though the resultant story can be broadcast as such truth to the world!

Of course, in the rational, ordered world of modernism, there was a hierarchy established through the study of natural sciences and philosophy. Man was atop that hierarchy. (Contrary to current rhetoric, the idea of God as the controlling factor in one's life was not rejected with the dawning of postmodernism, but rather with the Enlightenment.) As might be expected, a hierarchy was then established within mankind. This hierarchy manifested itself in the social, economic, political, and military areas of life, and institutions within each of these areas established their own hierarchies. Postmodernism attacks these authoritarian structures as merely overt tools of control and attempts to dismantle them by questioning the reality on which they are constructed or the justification on which these structures base their authority. This is the leveling tendency evident in the social discourse today. There is no inherent justification for one person to be judged better than the next or to have control over another.

A recently retired Army officer, whose last job was head of the West Point leadership department, ran head-on into this postmodern conceptual ethos. As reported by *The Wall Street Journal*, the officer fell victim to his penchant for belittling the noncombat arms, not understanding the issue of a sexually threatening work environment and gender discrimination, and attempting to assert hierarchical control, all hallmarks of a modernist, traditional institution. Most telling, perhaps, is the sworn statement made by a subordinate officer in the department: "'Colonel Hallums' glorification of the combat arms . . . translates into a program that is being perceived as exclusionary of women [because women cannot gain entry into ground combat]." In

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addition, he said, the colonel was "insensitive to our feelings." Though he and his colleagues were technically subordinate, he added, "It was hardly the way we expected to be treated."[11] These are clear, unequivocal indications of the cultural creep of postmodernism from the general civilian sector into the military.

The next category of concepts is the source of much debate in today's academy. Modernism attempted to draw together disparate strings of reasoning to form a coherent, explainable whole. After all, with its emphasis on rational, scientific explanation, modernism strove to identify an organizing force responsible for what appeared to be a consistent nature. But, as the postmodernists point out, even those supposedly objective judgments were actually subjective observations. Every person's apprehension of the surrounding world and events depends on that person's previous life experience, so supposedly objective standards are not exempt from such subjective influences. So a postmodernist attempts to deconstruct the purported objective reality to get at those subjective aspects. The analogy is peeling back the leaves of an onion, until you peel back the last leaf and there is nothing there. Deconstruction is a recursive examination of the circumstances and language surrounding an event, constantly turning in on itself as it attempts to identify what was *not* said or done, and why. The intent of the author of a text is of no significance, anymore. The meaning of any text is indeterminate, because the subjective construct surrounding its development is just a flash in the pan of time. The best one can hope for is to expose the circumstances of its composition by determining what was not said. This is one of the harder concepts to understand. Suffice it to say, deconstruction as an analytical tool places all language and action at risk.

Of course, with its emphasis on marginal groups, the next set of concepts should not be surprising. Assimilation was the goal of the modernist philosophy but rejected as nothing more than authoritarianism, or power over others; the postmodernist embraces the separation of multiculturalism. This allows for a more evident recognition of marginal groups, empowering their voices and their politics. It gives them the ability to have a say over their own

destiny. The most common analogy here is the melting pot of the modernist versus the salad bowl of the postmodernist. The important point here is the empowerment of the emerging groups.

The final set of concepts also relates to the issue of power. The modernist practiced domination through political, communicative, and economic means. The strings of power were gathered up into central institutions and individuals. The postmodernist wants to see fragmentation of that power because it will enhance the achievement of goals in other areas. Indeed, Madeline Morris, a Duke University law professor and paid advisor to the Secretary of the Army, proposes changing military culture "from a masculine vision of unalloyed aggressiveness to an *ungendered* vision combining aggressiveness with compassion" [emphasis added].[12]

These, then, are just some of the applicable postmodernist concepts that characterize our culture today, and to which the military institution must attend. These largely had their origin in the rejection of established authoritative systems and institutions during the late 1960s and early 1970s. The children of that generation are now populating the general workforce, to include our military. For any military leader to ignore the dynamics within his or her unit established by this significant cultural paradigm shift in expectations is to invite bitterness, disillusionment, and even disaster.

The Marines have recognized this aspect of the culture and are acting to modify the value system of new recruits. Incorporating a new, final phase of boot camp called Crucible Week, the Marines hope to establish a common value base between the diverse group of recruits it brings into service. Richard Newman, in covering the new training, writes:

> Recruiters say they're equally frustrated by the lack of values they encounter. A recent Marine paper on cultural indicators outlined some of the concerns: seventy-six percent of teenagers admit to cheating on tests and homework; only forty-four percent think older people should be respected. The Marines worry mainly that the self-interest and dismissive attitude reflected in such trends will undermine the cohesion required to fight effectively.[13]

And Bradley Graham of *The Washington Post*, in treating the same subject, states, "Institutions traditionally central to responsibility and civility—church, school, nuclear family—are in decline. 'Marines today come from a different generation of young people,' said Brigadier General Jerry Humble, commander of the Parris Island training facility."[14] These are prime indicators of the cultural shift heralded by postmodernism. A military leader ignores it at great peril. As Charles Moskos states in the same article, "Ultimately, the military reflects the society it protects. . . . But it has to keep up some safeguards." The military can succeed in handling the recruit's cognitive dissonance at basic training only if the military is aware of what it is it must counter.

While today's leaders need to be aware of these societal dynamics, and expect their manifestation in units and organizations, tomorrow's leaders will need to be armed to deal with the increasing tensions and challenges to the traditional, modernist military hierarchy. Lines of authority, privileged voices, unit cohesion, centered decisionmaking—these and other attributes of the traditional military will come under increasing assault as the population of the military becomes ever more postmodernist.

A QUICK SIDEBAR INTO POSTMODERN POLITICS

Given the military's close ties to the political instrument of power, it is important to take just a moment and see how postmodernism could affect politics in the world. Though not specifically tied to this paper's main thesis on culture and officer preparation for the future, our officers are finding themselves on the first line of diplomatic defense with the various MOOTW efforts over the past 5 years. Willingly or not, young officers (and NCOs) are being placed in the position of making a decision in a confrontation that could have significant, even strategic, consequences.

Following the collapse of the Soviet Union, international relations theory was thrown into an uproar. Some maintained that the world was now a safer place, and the United Nations was becoming a more active player in world events. Perhaps the idealism of Woodrow Wilson was appropriate again.

At the same time, those pursuing defense dollars for other programs declared victory and promptly called for a reduced military, pulled back into the United States. The isolationism of this group never really caught on. Their presidential candidate was soundly trounced in the 1996 Republican presidential primaries.

Finally, there was the predominant group, the realists, who never wavered from their stance that man's inherent evil nature would always be present, and power was necessary to deter aggression. The world would not be a safer place, and maintenance of a strong, multipronged defense was still necessary. These predictions have largely proven to be true, but the certainty of the realist position, with its obvious modernist tendencies toward privileged centers of power, hierarchies, and assimilation, finds itself under attack from the postmodernists.

The collapse of modern structures such as communism and the inability of capitalism to deal with individual issues of empowerment have given rise to postmodernist critiques of the prevailing realist international relations theory. Focused on the nation-state as its coin of the realm, realism now finds its basis of power under assault. "If postmodernism can be said to have a political project, it is devolution. In a reversal of hierarchies, received ideas . . . are viewed as invisible agents of domination and local knowledge is privileged."[15] And, of course, the ultimate postmodern device currently known to the world, a device capable of instantaneous dissemination of information across sovereign boundaries, is the computer and its ability to hook into the Internet and the World Wide Web. This, and other associated information age technologies, also challenge the grip of realism on the execution of international relations today.

Notice the emphasis on "local knowledge." Leaders who will be forced to operate in these areas of upheaval need to understand that local culture is important to their success. Reliance on old ways of thinking of power and nation-state relations may prove to limit and hinder successful mission accomplishment for future leaders.

A RECURSIVE MOMENT

Culture, and more particularly postmodernist influences on that culture, is a critical area for PME. And the cultures involved are not just of foreign nations to which a person may be sent. American culture itself is subject to these same pressures. A future leader will need to understand and tolerate such dynamics in his or her unit in the future. The selected phrases of requirements for future leaders that were isolated earlier are loaded, intentionally or not, with many of these cultural concerns we identified. The emerging marginal groups clearly speak to the required ability to deal with diversity. *JV 2010* itself touches on such postmodern issues as hierarchies, diversity, individual empowerment, and multiculturalism when it calls for the "reduction of structural or cultural barriers to innovation." And the need for cross-cultural skills speaks to all of the postmodernist concerns.

American culture itself provides a wonderful training ground for this kind of cultural education. A smart leader will take advantage of every opportunity to tap into this resource within his or her own organization. The very diversity of gender, ethnic, and racial populations within the military today allows for cultural engagement and, consequently, cultural understanding. Leaders can widen the base of cultural experience within their own organizations.

THE EDUCATIONAL TURN

There are still the open issues of PME and, to some extent, formal civilian education and their roles in preparing future leaders for the uncertain world of tomorrow. The benefits of an interdisciplinary education need to be argued for its applicability to this cultural issue.

This essay opened by highlighting certain doubts about the ultimate applicability of a predominantly SM&E education in an ambiguous, uncertain, culturally jarring world. Make no mistake: as the services increasingly turn to technical solutions for problems, there is no doubt that a corps of technologically savvy personnel

will be needed to help guide the services through the technological maze. However, the military risks returning to the state of affairs John Lehman identified in his interview. Remember his condemnation of Rickover, who expressed in congressional testimony in 1976 his disdain for young officers who had not majored in a technical area: "I think teaching management as a major subject for an undergraduate is ridiculous and I can see no way that it contributes to the ability of a junior officer to do his job. . . . The social sciences should be specifically excluded [from the U.S. Naval Academy curriculum]."[16]

Additionally, in a February 1996 report on SM&E requirements for the future Army, the Army Science Board conveys a clear predilection for SM&E, declaring that SM&E skills have diminished over the years. The current crop of technologically illiterate officers "'don't know what they don't know' in their fields of technology. Increasingly, they are being held hostage by industry and a more insulated acquisition corps as important combat development and materiel acquisition decisions are made."[17] While an interesting indictment of the current officer corps in the Army, it is not particularly surprising. What is surprising is that there seems to be no effective, not merely assigned, proponent at a senior level championing interdisciplinary studies. There is a smattering of articles in professional journals dealing with this topic, but there is little focused attention at the proponency levels. Yet, short of engagement with the actual culture, how best to expand a person's cultural awareness? Through interdisciplinary studies!

The very character of interdisciplinary study, and its associated attempt to make connections across varied subject areas, implies that a specific area benefits from, or is otherwise influenced by, events outside its immediate area of concern. There is recognition that the subject has multiple possible facets and that each of these facets lends a distinct view of the matter; however, all the facets contribute to the totality of the interpretation. For example, a rough, uncut diamond is thoroughly studied by the gem cutter beforehand so as to picture what the final cut stone will look like. Each possible facet cut is evaluated for the contribution it would make to the

value, clarity, and beauty of the resulting gemstone. So it is with the abundant possibilities an interdisciplinary approach brings to any topic. Each topic so treated benefits from the combined insights contributing to the analysis. New possibilities of relationships and identification of causal factors expand understanding of the topic, enriching our engagement with that topic. This intellectual agility derives largely from the multiple, possible interpretive constructs of interdisciplinary work.

As a general statement, an interdisciplinary approach to a subject usually involves topical areas from outside SM&E, areas captured in the construct of the humanities or the liberal arts. The richness of engagement with a particular subject is directly linked to how well the various threads represented by the humanities are interwoven with necessary quantitative analysis. The immediate benefit of these various disciplines may not be obvious to the individual trying to balance quantitatively measured "means" against hypothetical "ends." But if one ignores these alternative analytic constructs, then the full range of possibilities will fail to meet the clarity of vision both sought and hoped for. Since the human experience, with its associated construct of reality and knowledge, usually flows from those things "cultural," it is imperative to capture those areas less suited to quantitative analysis. As a quick example, let's examine the benefit of knowledge of just a small part of the body of art principles and movements. Art, and more specifically, painting, provides a window into the culture of a society, providing just one of the many possible facets of that culture's world view.

A common refrain in any discussion involving ambiguous situations is, "What's our perspective?" That whole idea of perspective is critical to understanding the general trend of painting from the 15th century to the late 1800s, and the consequent development of abstract painting. Prior to the 1500s, the relationship of figures and objects in a painting was driven mainly by the artists' attempts to lend significance to an event or individual, usually religious. Perspective did not matter to them. Conveyance of subjects of eternal import was the overriding concern; artists had

no rules for depicting their subjects. Thus, distorted figures and objects, combined with disorienting angles of view, lead to the modern perception of difference when viewing such a work.

But, in a series of developments through the 1400s, various artists began to place things in their "proper" perspective. That is, the techniques for depicting a scene in a painting were developed to lend realism and scale to the items in that scene. Now it was necessary to understand that an artist depicted the "correct" perspective, a "privileged way of seeing," in his work, and the value of a work was assessed accordingly. For our purposes, the key fact here is that the resulting scene was the result of a *single point of view*. The artist has his feet planted firmly in one spot, looking, if you will, through a window framing the scene.

However, in a significant rejection of this tradition, a new artistic movement emerged at the turn of the 20th century—cubism.[18] In an interesting twist on the arts-versus-science argument, the cubists adhered to Cezanne's dictum, "Everything in nature takes its form from the sphere, the cone, and the cylinder." The early Cubist reality was geometric and drew inspiration from tribal art of Africa and Oceania. But the critical departure in terms of perspective was Cubism's multiple perspectives of a subject: "They presented a new reality in paintings that depicted radically fragmented objects, whose several sides were seen simultaneously." In other words, they depicted views of objects from different angles *not simultaneously visible* in real life. It is this apparent disorder (as opposed to a traditional scene) that created much of the uproar when the Cubists started showing their works, and abstract art took its place among the significant art movements.

So perspective, an underlying principle of painting, developed from an intentional imposition of reality, through the traditional, fixed view of the subject, to a radical fragmentation of the reality observed into multiple facets. Interesting parallels exist here with the development of modernism and postmodernism. However, two other artistic manifestations are of interest in this cultural examination.

One is the movement termed mannerism,[19] in which the work was based on intellectual preconceptions rather than direct visual perceptions. The human figure was primary, though distorted; colors were harsh and vivid; and heightening of emotional effect was sought. "It is an unquiet style, subjective and emotional."

The second movement of interest is expressionism.[20] As a term of art, it refers simply to the search for expressiveness of style. In this broad sense, works of expressive art span the centuries. However, in a modern sense, it refers particularly to a German school of art in the early 20th century. It exaggerated and distorted line and color, abandoning the naturalism implicit in Impressionism in favor of a simplified style which should carry far greater emotional impact. The artists were not concerned with reality; rather, the inner nature of the subject was explored, with its attendant emotions.

In all cases—cubism, mannerism, and expressionism—the purely objective view of the subject, that traditional, fixed perspective, is rejected. The emphasis is on subjectivity, emotional response, and multiple perspectives captured on a single, two dimensional surface. These are objects of a culture, caught in time and place, interpreted for the viewer by the artist. But, in the case of these three schools, the view for an uneducated viewer is unsettling, turbulent, unrealistic. Hence (assuming no attempt at self-education), resultant tendencies are to reject the view, ignore it altogether, or classify it as so aberrant or unsophisticated as to merit no serious consideration. The uneducated viewer cannot "read the text" of the paintings. Based on reader-response theory, then, the material will be marginalized or even excluded completely from consideration. Consequently, there is the attendant loss of an opportunity for fuller understanding of the perspective involved, the culture portrayed. Interestingly enough, these movements all evidence the postmodernist tendency to question previously held "objective truths," asserting subjective, individual interpretation of subjects.

The implication for anyone working with another culture is clear. They will not be able to "read the text" of the various cultures without an expanded knowledge of other subjects. Painting, as a

key visual art for insights into a culture, is one of those subjects which enriches a person's world view. Paul Belbutowski, in his examination of "Strategic Implications of Cultures in Conflict," asserts culture is the neglected factor in service schools (along with world religions). He borrows philosopher Ernst Cassirer's "Circle of Humanity" model with its six categories to assess culture.[21] Belbutowski maintains art is dismissed, seen only in the context of the decorative arts. In justifying art as worthy of study in service schools, he asserts: "In the story of mankind, however, art reveals the unfolding of the symbol in graphic form, often indicating the values of a people. In creating a work of culture, the artist becomes an instrument of transcendent power."[22] The study of *any* art medium increases the cultural literacy of a person.

The engagement of the individual with art, and especially the movements discussed above, is an education in seeking, recognizing, and being comfortable with multiple perspectives of the same subject—a distinctly postmodern attitude. Inter-disciplinary studies develop a holistic manner of thinking. The viewer develops the ability to recognize and to deal with multiple perspectives simultaneously. This is a critical skill for any person dealing with ambiguity and uncertainty due to cultural differences. It is not just art that can teach this manner of thinking, however. All the humanities emphasize engagement from multiple perspectives and an ability to reconcile and synthesize different viewpoints. Even Clauswitz used the comparison with painting and poetry when discussing his concept of military genius and the role of the Muse in this area.[23]

FRACTURED SYNTHESIS

In a recent speech, General John Sheehan (commander in chief, U.S. Atlantic Command) alludes to the conceptual shortcomings in current security discussions for the 21st century:

> Today, in a world devoid of the certainties of four decades of Cold War rules, parameters, and solutions, many discussions on European security often lack substance and focus . . . it is clear that

the conceptual foundation of many discussions is still built upon
the thinking of a bygone, bipolar era. Today's challenges are too
complex and diffused . . . today's security challenges have
political, economic, cultural, and even environmental dimensions
in addition to the familiar military dimension.[24]

In his remarks, there is a move from the metrics of the Cold War era
to an era demanding the broad cultural insights that are the very
foundations of an interdisciplinary education. It is here that the
leader of tomorrow will encounter that fractured synthesis of a
single, multidimensional world with many different fracture lines
adding to the complexity and ambiguity of his or her experience.

Though earlier criticism was directed at the lack of a champion
for an interdisciplinary approach, there is one person who seems to
be emerging as a possible standard bearer, based on his
publications. That person is Lieutenant General Jay Kelley,
Commander, Air University. Kelley provides a keenly focused
critique of current PME and the needs for future effective PME in a
Joint Force Quarterly article.[25] His insightful comments on the future
of PME, if carried out, perhaps hold the clearest and most
reasonable mix of emphasis on the human and the technological
components of the PME process. While acknowledging the need for
personnel technologically smart enough to identify and select
emerging developments, the bulk of his discussion centers on the
human element as raw material bringing different orientations, as
a target of process, and as product. His money is bet on the human
element. Encouragingly, two of his three identified outputs for
future PME deal with culture. One output deals with "right
conduct," while the key one applicable here is, "Understanding how
human beings of different backgrounds and cultures (or services) act
in different circumstances is integral to understanding the sources
and nature of cooperation, friction, and conflict among people." He
goes on to state that the PME approach must become
"multidisciplinary and multicultural." [26] His continued support of
such a curriculum may hold some promise for future PME
refinements.

The study of anthropology, literature, history, and other subjects provides further capability to absorb and make sense not only of foreign but of American culture also, as well as the impacts of those cultures. Herein lies both the challenge and the opportunity in regards to the spreading postmodernist ethos. Postmodernism in American culture presents the engaged person a bewildering set of choices and interpretations, similar to those of foreign culture engagement. Some of the education of our future leaders can take place right within their own units if they only know how to make use of these advantages! The same dynamics, the same evaluations of competing claims, the same cultural diversity that comes with deployments to foreign countries exist in our units now. Let's be sure to leverage that fact for educating future leaders.

Quantitative, parametric analysis and SM&E education have a place in this interdisciplinary process, but any attempt to reduce the human condition, indeed, human nature, to formulaic absolutes will fail. There is a reason the liberal arts have survived these many centuries, albeit tenuously, even when under assault by mathematical and scientific rational certainty. It is time for the quantitative bias in our military to make room for the range of cultural interpretive possibilities and syntheses brought to the table by interdisciplinary studies.

NOTES

1. As quoted by Colonel Scott B. Sonnenberg, USAF, in Letters to the Editor, *Parameters* 20, no. 3 (August 1990): 86-87. Sonnenberg was teaching at the U.S. Army War College at the time. His letter dealt with his informal survey of various reading lists published by active duty and retired senior officers. He identified two trends in those lists. Not surprisingly, the first trend was a remarkable consistency across the lists of books he reviewed. The second trend was "a complete lack of any book on a nonmilitary subject."

2. Fred Reed, "Military Academies Fail at War Training," *Army Times,* February 19, 1990, 62.

3. John Lehman, interview in *Life in the Times,* 1988.

4. Edwin Dorn, "PME: Preparing Military Leaders for the Future," Association of the U.S. Army Institute of Land Warfare Conference,

Arlington, VA, August 6, 1996.

5. *Joint Vision 2010* (Washington: Joint Chiefs of Staff, 1996) 28.

6. Ibid., 28-29.

7. Ibid., 33.

8. These five areas are: traditional hands-on leadership; leading integrated (i.e., joint) forces; readiness for noncombat roles; enablers of systematic change; and, leaders as businessmen.

9. David E. Price, "Leadership: Some Thoughts on the Military Circa 2025," *Joint Force Quarterly* 13 (Autumn 1996): 98.

10. Martin van Creveld, *The Training of Officers: From Military Professionalism to Irrelevance* (New York: The Free Press, 1990), 87, 107.

11. Thomas Ricks, "Army at Odds: West Point Posting Becomes a Minefield For 'Warrior' Officer," *The Wall Street Journal,* March 13, 1997, 1.

12. Rowan Scarborough, "Army Too Macho, Advisor Says," *The Washington Times, April 3, 1997,* 1.

13. Richard J. Newman, "The Few, the Proud, the Smart, the Moral," *U.S. News and World Report,* December 16, 1996, 34.

14. Bradley Graham, "Marines Throw Up New Hurdle in Endurance Course: Personal Values," *The Washington Post,* January 26, 1997, A3.

15. Andrew King, "Postmodern Forerunners," *Postmodern Political Communication: The Fringe Challenges the Center,* ed. Andrew King (Westport, CT: Praeger, 1992), 20.

16. William R. Bowman, "Do Engineers Make Better Naval Officers?" *Armed Forces and Society* 16, no. 2 (Winter 1990): 272.

17. *The Science and Engineering Requirements for Military Officers and Civilian Personnel in the High Tech Army of Today and Tomorrow,* Army Science Board Ad Hoc Study Final Report (Washington: Assistant Secretary of the Army for Research, Development and Acquisition, 1996), 12.

18. Nicholas Pioch, "Cubism" and "Picasso and Cubism," *WebMuseum, Paris,* December 1995, Internet, November 29, 1996.

19. Peter and Linda Murray, "Mannerism," *The Penguin Dictionary of Art and Artists,* 5th ed. (New York: Penguin Books, 1987), 250-251.

20. Nicholas Pioch, "Expressionism," *WebMuseum, Paris,* December 1995, Internet, November 29, 1996; Peter and Linda Murray, "Expressionism," *The Penguin Dictionary of Art and Artists,* 5th ed. (New York: Penguin Books, 1987), 132-133.

21. Paul M. Belbutowski, "Strategic Implications of Cultures in Conflict," *Parameters* 26, no. 2 (Spring 1996): 42, note; Belbutowski cites

Ernst Cassirer, *Essay on Man* (New Haven: Yale University Press, 1944).

22. Belbutowski, 36.

23. Carl von Clausewitz, *On War*, trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1984), 109-110.

24. John Sheehan, address, College of William and Mary Seminar, Williamsburg, VA, April 12, 1996.

25. Jay W. Kelley, "Brilliant Warriors," *Joint Force Quarterly* 10 (Spring 1996): 104-110. See also volume 1 (of 5) of the *2025 Study* published by the Air University Press (1996). In this, Kelley not only expands somewhat on the article in *JFQ* but also introduces a much more in-depth examination of PME for 2025 as envisioned by the U.S. Air Force Tiger Team.

26. Kelley, 107.

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INTO THE 21st CENTURY

SOLVING THE AIR FORCE PROBLEMS OF GENDER DIFFERENCES AND LEADERSHIP

MARTHA J. M. KELLEY

LEADERSHIP STYLES

THE MYERS-BRIGGS TYPE INDICATOR WAS DEVELOPED BY ISABEL Myers-Briggs to identify differing preferences reflected in a person's chosen friends, recreation, work, and leadership style.[1] Although there is no agreement that one leadership style is uniquely the best, there is evidence that those occupying leadership positions tend to share characteristics and restrict participation of or pressure those who are dissimilar.[2] In response, most people, including women, either self-select for the career field, adapt behavioral orientation, or change to career fields in which their preferences may be more fully realized.[3]

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In this study, the author examines those leadership characteristics and preferences as they relate to gender, specifically women occupying leadership positions in the military. Creativity and strategic thought necessary to preparation for future military operations require synthesizing all potential talent rather than cloning one style of officer leadership. Do successful women clone men's leadership styles? If diversity is essential to survival and growth of an organization, then differing attributes and preferences must play an important role in the operation of efficient and effective organizations. If military women self-select or adapt, the loss in diversity required to maintain a lead for future military operations and the harassment this adaptive behavior may predispose will likely exact a high price someday. The Armed Forces must better educate personnel and ensure productive work environments to execute tomorrow's goals effectively.

PRESENTATION OF DATA

A review of data on biological gender differences, communication differences, and differences as measured by the Myers-Briggs Type Indicator (MBTI), a scale identifying personal preferences, was conducted. An analysis of leadership and gender style explores these differences, including the unique capabilities women can contribute and how self-selection and adaptation negatively impact productivity. Finally, actions useful in assisting unlike types to adapt to leadership positions in a healthy manner are addressed.

Data on the most fundamental differences between men and women—genetic differences—are reviewed within this framework. This is foundational to later arguments regarding communication and leadership differences. The intent is to identify unique gender differences that may predispose individual strengths, *not* to compare with respect to status (better, best).

Additionally, this study focuses specifically upon gender differences, women, and leadership styles. However, inferences and conclusions may also apply to other minorities and men working in career fields traditionally dominated by women or men having dissimilar preference types from the majority in the military.

GENETIC AND BIOLOGICAL DIFFERENCES

Biological sexual differences impact gender orientation significantly. Although researchers direct considerable debate toward the nature/nurture question, certain biological sexual differences are well defined. How these differences influence perception, interaction, and ultimately leadership styles is somewhat more difficult to ascertain. A review of these genetic differences is prerequisite to the study of leadership differences and women's unique contributions to a healthy organization.

According to Gelman et al., men and women experience the world differently based upon hormones. These researchers do not deny the impact of culture, but resolutely state, "Men and women seem to experience the world differently, not merely because of the ways they were brought up in it, but because they feel it with a different sensitivity of touch, hear it with different aural responses, puzzle out its problems with different cells in their brains."[4] He believes that hormones play a role far greater than simply contributing to external sexual characteristics.[5]

Numerous other studies corroborate these findings. Jo Durden Smith writes, "The brain not only produces hormones but is also acted upon by those same hormones." She states "Hormones, including sexual hormones, have been found in the brain. And it's become clear that in important respects the brain is itself a gland: a thinking gland, even a sex gland."[6] She infers true genetic differences in brain functioning, stating, "This implies a sexual stamping, a genetic one and I think, its now becoming increasingly plain that the sexual stamping I'm talking about does indeed start in the fetus. It is reinforced and magnified by our cultural institutions. But it is genetically based. It is part of our biological inheritance, and it is mediated by hormones."[7]

Researchers conducting brain lateralization studies believe the female brain is organized to function more symmetrically, allowing integration of left and right brain functions more readily than the male brain. "There's evidence that male and female brains may be somewhat differently structured with the two cerebral hemispheres being more specialized and less well interconnected in men than in

women."[8] In a recent Yale University study, Sally and Bennet Shaywitz observed male/female differences in brain processing using magnetic resonance imaging. They noted women used both brain hemispheres to process rhyming compared to men.[9]

Anatomical brain studies also show differences between fetal brains. Females have a larger corpus callosum, the connecting nerves, which may explain the ability to transition left and right brain functions rapidly.[10] Anne Campbell says hormones impact brain connections and development. "Testosterone is the most important of the sex hormones that cause a baby in the womb to develop into a boy . . . and male fetuses have higher levels of it than females. It might just be that a slight excess of testosterone at a crucial stage before birth causes the connections in the brain which underlie verbal ability to shift a bit from the left to the right side."[11]

Similarly, in *The New York Times Magazine*, Nicholas Wade reported,

> In human fetuses, too, the sex hormones seem to mold a male and female version of the brain, each subtly different in organization and behavior. The best evidence comes from girls with a rare genetic anomaly who are exposed in the womb to more testosterone than normal; they grow up doing better than their unaffected sisters on the tests that boys are typically good at.[12]

Other studies describe the process as follows:

> Specifically, medical studies have shown that between the eighteenth and twenty-sixth week of pregnancy, something happens that forever separates the sexes. Using heat sensitive-color monitors, researchers have actually observed a chemical bath of testosterone and other sex-related hormones wash over a baby boy's brain. This causes changes that never happen to a baby girl. . . . The human brain is divided into two halves, or hemispheres, connected by fibrous tissue called the *corpus callosum*. The sex-related hormones and chemicals that flood a baby boy's brain cause the right side to recede slightly, destroying some of the

connecting fibers. One result is that, in most cases, a boy starts life more left brain oriented.[13]

From the scientific evidence, the issue is decidedly more complicated than simply having left or right cerebral dominance associated with specific skills. But what seems clear is that testosterone significantly alters the connections in the male brain prior to birth; females do not undergo a similar phenomena and consequently use *both* hemispheres of the brain to process information.

Evidence points to a genetic difference that may affect the way a person interacts with his surroundings. Females rapidly transition from left to right brain functioning; what are the implications for behavior and leadership in different communication patterns and skills?

GENDER DIFFERENCES IN COMMUNICATION

The biggest mistake is believing there is one right way to listen, to talk, to have a conversation—or a relationship.[14]

Good communication is a difficult skill to master and a great source of friction in any organization. Situation, culture, and gender style complicate communication. Linguists agree the sexes communicate differently, a result of both genetic differences and cultural training. Examining these differences is basic to understanding and enhancing organizational functioning.

First, what do we know about how biological/genetic differences impact women's communications with others? Secondly, are women's interactions different enough from men's communications to predispose misunderstanding?

Campbell reports females' brains are less lateralized and believes this to mean:

The answer in a very general way, appears to be that the female brain is better organized for communication between its two halves. . . . If we look at the activities girls excel in, we see there

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also seems to involve communication. Verbal skills are used to communicate with others and women on the whole use words more expressively than men. . . . A picture, therefore, emerges showing that women are better communicators than men, that is based at least partly on differences in the brains, and that these differences probably exist at birth.[15]

Another study concluded, "Females, by contrast, are sensitive to context, good at picking up information that is incidental to a task that's set them, and distractible. They have superior verbal skills."[16] And Nicholas Wade agrees, relating that women's innate skills may give them an edge in perceptual speed, verbal fluency, and communication skills.[17] There appears to be a genetic connection to these skills implying abilities akin to "women's intuition."

ROLE OF INTUITION IN
WOMEN'S COMMUNICATION

Intuition is defined in the dictionary as "direct perception of truth, fact, etc. independent of any reasoning process."[18] Although discussion about women's intuition abounds, there is little hard research in the area.

Ashley Montagu believes that "The female's inability to cope with the physically stronger male obliges her from an early age, to develop traits, that will enable her to secure her ends by other means. . . . From the earliest age, girls find it necessary to pay attention to nuances and small signs of which the male rarely recognizes the existence."[19] Similarly, Gelman et al. write:

From infancy on, males and females respond in ways that provide significant clues to later differences and behavior. . . . McGuiness believes that girl infants are more alert to social clues. They respond more to people, read facial expressions better and seem better able to interpret the emotional content of speech even before they can understand words, a clue to the proverbial women's intuition.[20]

Margaret Loesch, president of the Fox Children's network, relates that "trusting an untested creative answer demands a confidence in the feel of things. This is the emotional side of intuition."[21] She feels women have an advantage in this way.[22]

These traits seem to encompass much of what we call intuition. Unfortunately, Roberta Williams, creator of Sierra On-Line, an animated computer adventure game, reports that when women trust their intuition, men don't.[23] Intuition appears to play an important role in women's communication process.

A LINGUIST'S PERSPECTIVE

Other behaviors also reflect gender differences according to linguists and psychologists. Witness the success of Dr. John Gray's *Men are From Mars, Women are From Venus*.[24] Linguist Deborah Tannen, who has written several well-documented books identifying these differences, states that men and women have different but equally valid styles of communication and asserts that men and women can interpret the same conversation differently: "If we recognize and understand the differences between us, we can take them into account, adjust to, and learn from each other's styles." [25]

She believes communication is based upon key elements that differ for the sexes. Women's communication is closely related to connectivity and men's reflects status-type goals.

> Intimacy is key in a world of connection where individuals negotiate complex networks of friendships, minimize differences, try to reach consensus, and avoid the appearance of superiority, which would highlight differences. In a world of status, independence is key because a primary means of establishing status is to tell others what to do, and taking orders is a marker or low status. Though all humans need intimacy and independence, women tend to focus on the first and men on the second.[26]

Further, Tannen asserts, intimacy and connection are symmetrical (people are similar, feel close), whereas independence and status are asymmetrical (people are unlike) and are placed in a

hierarchy. Men frequently operate in mediums bound by hierarchy, status, rules, and orders. In contrast, women normally function with connectivity and closeness as paramount considerations.[27]

Imagine how these basic differences in communication can lead to confusion. When women communicate using consensus, this may seem unnatural to men. These differences may also be responsible for observations that some professional women "do not behave in ways appropriate to their positions."[28] This captures the complications for women, in male dominated environments, who do not strive for one-upsmanship.

Tannen states, "Because they are not struggling to be one-up, women often find themselves framed as one down." And probably worst of all for women is they may be judged differently even when they communicate similarly. "In other words, talking in ways that are associated with women causes women to be judged negatively, but talking the same way does not have this effect on men. So, it is not simply ways of talking that have an effect so much as the people's attitudes toward women and men." [29]

The linguist also observes that women frequently report that their comments are ignored but later attributed to males in the group. This may be a result of different communication styles. Women tend to phrase their ideas as questions, take less time when phrasing questions, and speak in a lower volume and higher pitch. These patterns are unlike male communication and place women at a disadvantage in such conversations. Additionally, when women adapt a more masculine style, they may be considered more credible, but less feminine. [30] Others confirm Tannen's assertions.

Eagley studied gender and leader effectiveness, concluding that women fared poorly in settings in which leadership was defined in highly masculine terms, especially in military settings, suggesting a pervasive gendering of leadership roles that can operate to the disadvantage of women or men."

Suzette Hayden Elgin, psycholinguist, wrote *Genderspeak* to improve communication between the sexes. "Male/female communication does not have to be either armed combat or endless mystifying tedium . . . it can and should be effective, efficient and a

source of mutual satisfaction."[31] Judith Tingley, psychologist and business communication consultant, states "When men and women adapt each others' different communication styles in the same way they adapt to the language of another country, this will help alleviate communication barriers between the two sexes." [32]

MBTI AND GENDER

Another tool commonly used to understand personality types, preferences, and differences is the MBTI. It is a questionnaire used to identify preferences and temperaments, which are then correlated with psychological type. It "measures perception, judgment, interests, values, needs, and motivational preferences."[33] The questionnaire is currently used in business and military organizations to facilitate understanding of others types, to enhance performance.

Isabel Myers-Briggs first published the MBTI in 1962 as an extension of her mother's interest in theoretical psychological types in conjunction with Carl Jung's work. She contended that theory must have a practical application; development of the MBTI provided the tool to highlight personality differences and enhance understanding. [34]

Psychologists use the MBTI to quantify individual preferences for perception, judgment, interests, values, needs, and motivation in four preference scales: Extroversion (E)/Introversion (I); Sensing (S)/Intuition (I); Thinking (T)/Feeling (F), and Judgment (J)/Perception (P).[35] From these preferences, 16 combinations or personality types emerge, each having unique traits and behavioral preferences.[36] Each type has preference implications that may predispose behaviors.[37] Within the military, the most representative type is the ISTJ.

On the basis of extensive research, Otto Kroeger and Janet Theusen believe ISTJs are attracted to the military.[38] Considering preferences and associated behaviors, ISTJs could be described as: *introverted*, attending to infrastructure and conceptualizing problems; *sensing*, knowing the facts, understanding planning stages and working implementation details; *thinking*, discussing

issues in a logical way, weighing the pros and cons of alternatives, and spotting inconsistencies; and *judging*, generating systems, organizing and acting with decisiveness. [39]

It is obvious ISTJs are attracted to the military because of its structured environment, traditionalism, and logical systematic approach. However, Knowlton and McGee feel these areas attracting persons to the military may be inconsistent with strategic leadership. ISTJs may not be best suited for strategic military leadership! [40]

Knowlton and McGee conducted studies comparing the MBTI with personality preferences and characteristics deemed important to strategic leadership. Analyses of associated preferences revealed that, "Based on that simple and direct analysis, it appears as if ENTPs and ENFPs naturally possess the preferences most compatible with leadership requirements at the strategic level." [41] The key skills requisite to strategic leadership include the ability to develop frames of reference for identifying cause and effect; integrate and synthesize concepts; communicate clearly and persuasively; negotiate and lead consensus building; and envision the future. The authors identify the ENF as having the best type combination for communication, negotiation and consensus building. [42]

Unfortunately, little has been published regarding gender differences and type. What is evident is a female preference for the F or *feeling* scale and a male preference for T or *thinking* scale. [43] Additionally, some studies have identified a slightly higher percentage of Es in female populations. [44] It is interesting that women don't score higher on the N scale (intuition) consistent with a "women's intuition" proclivity. [45] However, research indicates women score somewhat higher on intuitive measures other than the MBTI. [46]

What are the implications with respect to gender and leadership? Both communication and negotiation/consensus building favor ENF, with F being a strong female preference. There is some evidence E and N preferences may also exist, although they are not definitive female preferences. These skills are also those

described by Covey as "the key to survival and success to think in terms of building relationships and high trust cultures."[47]

Data for female students at the Industrial College of the Armed Forces (ICAF) indicate they are less introverted, less sensing, less thinking, and less judging than their male counterparts. Because of the small sample size, these results are not significant, but provided the current pattern remains consistent, female ICAF students will emerge as less ISTJ and more ENFP.[48]

In contrast, the Air War College does not maintain data by gender. Interviews with 19 female class members indicate predominant traits are 11 STs, 3 SFs, 3 NFs, and 2 NTs. Additionally, 13 preferred T, whereas only 6 preferred F. However, three of those identifying themselves as ESTJs or ENTJs quickly noted that they probably manipulated the test knowing what type the military favors.[49]

Evidence suggests women attempt to "fit in" and adapt or self-select, as some women suggested they had done with the MBTI. The next section delves into these issues in greater detail and provides insight into contemporary problems (sexual harassment and unprofessional behavior) plaguing the military.

LEADERSHIP, GENDER, AND THE MILITARY

As addressed previously, men and women operate and lead in the work environment somewhat differently based upon genetic differences, cultivation, communication styles, and the characteristics of their particular career field. Contemporary leadership culture seems to favor women's unique leadership styles and the capabilities they contribute to the work place. Specifically how do these gender differences manifest themselves in leadership, military leadership, and military women?

Differing leadership styles each make unique contributions to the organization. This diversity offers the synergy essential to holistic organizational effectiveness. Understanding that gender may significantly impact leadership style, a review of characteristics current experts consider essential to effective organizations and comparison with women leaders' styles is in order.

LEADERSHIP: TODAY AND TOMORROW

There is recent focus on how critical good leadership (versus management) is to any institution. Leaders seem to agree that strategic vision, good communication skills, creativity, and the ability to trust and empower subordinates are important. Current leadership philosophy stresses many characteristics viewed as feminine attributes and employed by women leaders.

Perry Smith identifies long-term planning as critical in leadership style, similar to the concept of vision.[50] Covey believes that a dominant trend of the future, long term thinking, favors the natural abilities and talents of women. He also identifies leadership as "more of a right-brained *intuitive*, visionary approach toward building relationships with people,"[51] implying that women have an edge in today's leadership challenges. Naisbett and Aburdene, in *Megatrends for Women*, state "The balance has finally tipped in women's favor. . . .It is not about women taking over, but women and men together expressing their full potential—neither superior or inferior."[52] Rianne Eisler believes women's leadership styles tend to employ a partnership model,[53] basing human relationships upon linking.[54] This linking is similar to the phenomena discussed by Tannen as intrinsic to female communication.

Christine McNulty stated that using both sides of the brain to analyze and synthesize data was requisite for successfully depuzzling the future.[55] Women may have an advantage herein, consistent with the ability to rapidly transition from left to right brain.

John Warden, *Desert Storm* air campaign architect, stated the military needs an organizational structure different from the current hierarchical order, which limits effective communication from the top echelon to the bottom or vice versa.[56] Corporations led by women are organized differently to encompass the connectivity, consensus, and closeness women prefer.

According to Sally Hegelsen, author of *The Female Advantage*, women's organizational structures reflect more of a web, where the most senior woman inserts herself in the middle of the structure to maximize communication and connectivity.[57] Howes and

Stevenson, co-authors of *Women and the Use of Military Force,* also support this position:

> Sociological studies indicate that women's management styles differ significantly from those of men. Women are less hierarchical. They organize on a broader base and prefer structures that are less like pyramids. Women in groups are less prone to self-assertion and more prone to compromise. . . . If women follow the trend shown by the sociological data and become a large minority of military personnel, their presence can be expected to change the organizational structure in which they participate.[58]

It just may be that the web-type structure preferred by women is a good alternative to the hierarchical status-driven organization. Naisbett and Aburdene describe future management styles, saying they "uncannily match those of female leadership. Consultants tried to teach male managers to relinquish the command-and-control mode. For women it was different: it just came naturally." [59]

Edward Moldt, of the Wharton School of Finance and Management, University of Pennsylvania, says many men still "act like master sergeants. That is not working nearly as well as it used to." This is because women tend to involve people in the decisionmaking process and are successful with people who "don't want to be bossed around." [60]

Peter Drucker says, "Over time women have evolved a successful leadership style that rejects the military model in favor of supporting and empowering people" and endorses it because it works better.[61]

Thus, contemporary leadership philosophy reflects similar phenomena reviewed in the sections on communications and future strategic leadership requirements. Do men and women in military leadership positions reflect similar gender differences or is the military unique, maintaining dissimilar concepts regarding leadership?

MILITARY LEADERSHIP

If current leadership philosophy is dissimilar to military leadership, is it incompatible with military operations, and are women's unique contributions not applicable? Although the military is traditionally a male-dominated environment (and may require strict command and control in combat), future challenges require strategic vision and leadership. Recall that Knowlton and McGee identify strategic leadership as using multiple frames of reference, integrating and synthesizing, communicating effectively, negotiating and consensus building, and envisioning the future.[62] These criteria also complement military leadership. Do military women employ the "feminine leadership styles" or do they adopt the "command and control military style?"

Evidence exists that military women tend to self-select or adapt to leadership, communication, and even MBTI types most typical of the military majority. Adaptation and self-selection produce a more uniform organization, which although advantageous in some respects (combat teams need clear understanding during crises), forfeits the benefits of diversity and may negatively impact the military.

Research indicates women in male-dominated careers frequently self-select, choosing careers which reflect their preferences. Howes and Stevenson report "As long as the number of women admitted to the inner circle is small, the few who self-select and are chosen will tend to share the dominant perspective of those already in place."[63] As further evidence of self-selection, these authors quote another expert, who "implies that women and men who pursue military service are of like mind; this position is supported by a study comparing female and male cadets at West Point."[64] Bstydzienski, writing about women and politics, argues "The few who achieve high-level positions are likely to be selected for their counterstereotypical characteristics."[65] It can be inferred that women who self-select for military careers may prefer more masculine communication styles, have MBTI preferences similar to the male majority (ISTJ), and favor those behaviors associated with masculine styles.[66]

Further, research demonstrates that women tend to *adapt* male-oriented behaviors and job requirements, in order to fit in, as previously described in sections on communication and the MBTI. Howes and Stevenson report adaptation as prevalent for women making military policy who:

> tend to protect themselves by adapting the attitudes of their male colleagues. They "go native in order to survive." Additionally, most research on women in contemporary male-dominated organizations suggests that women develop two major patterns of adaptation: cooption and segregation. The first applies to those structures and occupations where women accept male definitions of the situation and try to blend into the male organizational culture. The second pattern manifests itself in groups of female workers who become effectively isolated from the organizational mainstream and cultivate female friendship, support, and cooperation in order to cope with low status and poor working conditions. Both patterns preclude women as a group from having an independent effect on the structure and culture of mainstream organizations.[67]

Therefore, adaptation and self-selection are prevalent for women leaders in the male-dominated military. Why do women choose adaptation versus being themselves and employing their own unique leadership styles? One explanation is "fitting in" is safe. In the military, considerable evidence exists suggesting women are subject to misogyny.

Although this may sound extremist, a review of literature regarding women and military organizations provides an interesting perspective. Howes and Stevenson report, "Elements of the male role are exaggerated in the military, including misogyny and homophobia" and "to the extent that military service is equated with manhood, the mere presence of women is problematic," [68] as quoted from *Men's Studies Review:*

> The Armed Forces continue to use the traditional perspective of masculinity as an integral part of their resocialization process. . . .

> For many young men historically, entering the military is a means of proving one's status as an adult man. . . . Misogyny is an integral value in this process. Ironically, while the value of male supremacy is being espoused, the recruits are treated as subordinates, "as women." Women are regarded as inferior, subhuman beings. . . . Thus to be a man is to be a soldier, not a woman.[69]

In his book, *The Icarus Syndrome,*[70] Builder references Ogilvie on the male airman's perspective on women, which is common among military men: "In general he was contemptuous of women but wanted them to admire him. These two additional characteristics, a craving for immortality and a conception of women as objects to be used for narcissistic gains."[71]

Likewise, an article in *Minerva: Quarterly Report on Women and the Military,* regarding the female captivity during the Gulf War states: "Women in wartime and in military culture provide a ready test for male dominance and a ready target of anger: women become the object of male violence just for being there. They violate the male terrain of war and fraternity of power. Tailhook is an excellent example of male terrain, where the women "had" to have it happen. Similarly, the female captivity can't be over until there is a rape." [72]

These accounts highlight the difficulties for women in male-dominated environments. Although such studies may seem biased to majority members, brief discussions of misogyny with male class members at Air War College did not produce denial. These assertions by well-respected persons suggest misogyny is prevalent for military women and probably a very good reason why many adapt and keep quiet about inequities.

The author asserts that recognition of this adaptive behavior is important for two reasons. First, adaptation and self selection limit the diversity required for future strategic leadership, and second, it may be that adaptation plays a role in the sexual harassment that continues to plague military organizations. If women try to "fit in" they may signal they are not offended by abusive behavior. These mixed signals can reinforce the inappropriate behavior of the offender. Adaptive behavior does not cause sexual harassment and

the offender is ultimately responsible for his/her behavior. However, adaptation may be a factor, and if the adaptive person is a female leader, this even more dramatically gives mixed signals to others predisposed to harassment.

Air Force Secretary Sheila Widnall recognized the changing demographics of the U.S. military population, advocating strength through diversity as critical to future military success.[73] Diversity is not only a goal in strategic leadership but also a factor which the military must seriously consider for peak performance in the future. Encouraging people to communicate clearly that inappropriate behavior will not be tolerated is mandatory. Harassment disturbs work, resulting in substandard performance. Adaptation may, unbeknown to the perpetrator, contribute to this phenomena.

CONCLUSIONS AND RECOMMENDATIONS

The NF types . . . postulated to be the most skilled in communications and most likely to be inspiring leaders are underrepresented in leader samples.[74]

Within this study, data were reviewed regarding gender differences as genetics, communications, MBTI preferences, and unique leadership styles. The paper further compared leadership attributes to contemporary styles, which are predominantly traditionally feminine and thereafter, closely focused upon women in military leadership roles.

Self-selection and adaptation are factors common to female leadership in male-dominated environments—factors that ultimately limit diversity, hamper creativity, and may even communicate mixed signals to men and escalate to harassment. This is an environment unacceptable in the Armed Forces of the 21st century. They must undertake initiatives to make authentic change to avoid serious personnel and productivity issues in the future.

Whether men and women are unable to communicate effectively, successfully work together, and contribute equally to the job is not a question—its one of the next challenges. Roger Gorski states, "Human beings have learned to intervene with their

hormones—which is to say that their behavioral differences are what make them less, not more, like animals."[75] Human flexibility allows men and women to do what they choose versus being locked into stereotypical behaviors. Men are capable of, although they may not be comfortable with, working within organizations with less hierarchical structures (the web). Women can adapt to military scenarios (e.g., combat command and control scenarios). Women have already proven themselves and will continue to do so. In summary, each individual must be integrated and used to execute tomorrow's goals effectively.

In this vein, McGee and Knowlton advocate individuation, development of expertise, and understanding in areas that are not MBTI behavior preferences in order to become more balanced future leaders.[76] This development requires conscious effort and work but is not as difficult as often made out to be. The military needs merely to commit itself to molding the environment for the highest productivity of everyone, not just males.

A more serious problem appears to be organizational inflexibility in accommodating dissimilar personality types. In the military, the ISTJ preference type is predominant. Discrimination toward other preference types leads to self-selection and adaptation, limiting benefits of diversity and creativity critical to a healthy organization. The cost of harassment, investigations, communication problems, and disrupted daily operations is appalling. Ask the Navy what the total impact of Tailhook was to its members and ask the Army how much they have spent (dollars and manpower) on the current series of harassment charges and investigations. In order to remedy the potential loss of valuable initiative and highly qualified individuals, the military has to implement programs to integrate women, not segregate them.

Military organizations should continue *actively* to encourage and support women/minorities to fully integrate unique abilities they contribute. To do this right (versus giving lip service), the following is recommended:

● Integrate gender differences into professional military education leadership studies from the very earliest time a person enters the military and continue throughout his/her career. Classes should include, as a minimum, differences in communication, leadership styles, preference types, and individuation and *emphasize* the compounded value added through the complementary contributions of both genders. Ensure instructors in these classes believe what they are teaching. "Good old boy" school mentality needs to be eliminated right from the start. In addition, faculty who continue to promote (behind the scenes) such attitudes need to be removed from the program. A smirking male instructor sabotages the entire intent. *As the majority, supportive men are absolutely critical to success!*

Instructors would benefit from gender-diversity training. Such courses are widely recognized as critical to effectiveness by civilian commercial entities. One such organization is the National Association of Gender Diversity Training in Phoenix, Arizona.[77] Present military education and training fail to meet this badly needed emphasis.

● Endorse, as core curriculum, principle centered leadership classes, which maximize potential and are valuable to individuation. Maximizing potential and using all faculties, both left and right brain functions, should be a goal for all future strategic leaders.

Judith Tingley consults and recommends understanding gender communication by adjusting attitude, acknowledging differences without judging, adjusting attitude again, choosing techniques for response, and generalizing from the specific response to one's technique.[78] These ideas should also be included in core curriculum.

● Senior service schools should also collect data on both genders in the interest of diversity. There seems to be fear currently that such data will be used detrimentally. It is more important to review unique personal traits honestly, and assist people to understand that all don't have to be the same to

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contribute effectively. Senior service schools should utilize the MBTI to identify differences and preferences and should also encourage individuality (and thus diversity) by providing support to affirm unique preferences and leadership characteristics.

● Establish special counseling and support groups at bases and wings and in professional military education programs similar to those at ICAF, assisting persons to accept differences and appreciate value added versus trying to adapt or clone others. Additionally, support groups of peers or superiors could effectively assist females under stress as a result of being different or a minority. The importance of this type support is confirmed by studies on burnout and commitment among men and women in the Canadian Military Forces.[79]

Being the only one in a classroom unable to communicate a valuable idea because others are reluctant to consider the content based upon gender or communication style is stressful and a situation in which a senior officer should intervene and assist. Senior officer men play a critical role in supporting women as they set the example for other males in the military. Integrating women requires organizational adjustments, not just vague discussions of the issue at staff meetings.

In the final analysis, senior officers *must be sincerely involved*. Gender differences exist, and these differences can be complementary and add dramatically to holistic operations. Men and women offer unique and complementary contributions to the military. To employ its members effectively, the services must educate personnel better and more effectively and ensure growth environments exist; the alternative may well be significant failures in the future. So far, the military has done a mediocre job, as evidenced by continued adaptation, self-selection, harassment, and the hindrance of efforts to improve the force—at a cost of millions—in a time when innovation is especially essential.

NOTES

1. Isabel Myers-Briggs, *Introduction to Type* (Palo Alto, CA: Consulting Psychologists Press, 1980).

2. Bill Knowlton and Mike McGee, *Strategic Leadership and Personality: Making the MBTI Relevant* (Washington: Industrial College of the Armed Forces, August 1994), 49-54.

3. Janet M. Theusen, Otto Kroeger Associates, interview with author, December 9, 1996.

4. David Gelman et al., "Just How the Sexes Differ," *Newsweek,* May 18, 1981, 72.

5. Ibid., 72.

6. Jo Durden Smith, "Male and Female—Why?" *Quest 80—The Pursuit of Excellence,* October 1980.

7. Ibid., 94.

8. Nicholas Wade, "Method and Madness—How Men and Women Think," *The New York Times Magazine,* June 12, 1994, 34.

9. Sarah Richardson, "S/he-Brains," *Discover* 16, no. 6 (June 1995): 36.

10. Anne Campbell, *The Opposite Sex: The Complete Illustrated Guide to Gender Differences in Adults and Children* (Topsfield, MA: Salem House, 1989), 90.

11. Ibid., 90.

12. Wade, 34.

13. Smalley and Trent, 35.

14. Deborah Tannen, *You Just Don't Understand: Women and Men in Conversation* (New York: W. Morrow, 1990).

15. Campbell, 90.

16. Quoted in Smith, 17.

17. Wade, 32.

18. *The Random House College Dictionary,* rev. ed. (New York: Random House, 1980).

19. Ashley Montagu, quoted in Ron Schultz, *Unconventional Wisdom—Twelve Remarkable Innovators Tell How Intuition Can Revolutionize Decision Making* (New York: Harper Business, 1994), 38.

20. Gelman et al., 73.

21. Ibid., 82.

22. Ibid., 82-83.

23. Ibid., 38.

24. John Gray, *Men are from Mars, Women are from Venus* (New York: Harper Collins, 1992).

25. Tannen, 17.

26. Ibid., 26.

27. Ibid., 43.

28. Ibid., 217.

29. Ibid., 228.

30. Ibid., 239-240.

31. Suzette Hayden Elgin, *Genderspeak—Men, Women, and the Gentle Art of Verbal Self-Defense* (New York: John Wiley and Sons, 1993), xvi.

32. Judith Tingley, "Communication: Bridging the Gender Gap," *Healthcare Administration* 71, no. 4 (April 1994): 22.

33. Terrence L. McCarthey, "MBTI Applied to Executive Leadership," Research Report No. 87-1680 (Maxwell AFB, AL: Air Command and Staff College, 1987), 3.

34. Isabel Myers-Briggs, *Gifts Differing* (Palo Alto, CA: Consulting Psychologists Press, 1980), x, xi.

35. "The EI index (or scale) is designed to reflect whether the person is an extrovert or introvert. . . . The SN index is designed to reflect the person's preference between two opposite ways of perceiving, i.e., whether he relies primarily on the familiar process of sensing . . . or primarily on the less obvious process of intuition. . . . The TF index is designed to reflect the person's preference between two opposite ways of judging, i.e., whether he relies primarily upon thinking . . . or primarily upon feeling. . . . The JP index assigns a preference to one of the other two mental functions themselves. That is, either the perceiving (SN) function or the judging (TF) function is said to be dominant in one's dealings with the world." Isabel Myers-Briggs, *Manual: The Myers Briggs Type Indicator* (Palo Alto, CA: Consulting Psychologists Press, 1962), 1-2.

36. These type combinations are: ISTJ, ISFJ, INFJ, INTJ, ISTP, ISFP, INFP, INTP, ESTP, ESFP, ENFP, ENTP, ESTJ, ESFJ, ENFJ, and ENTJ.

37. For a description of the preference types, see Isabel Myers-Briggs, *Introduction to Type*.

38. Knowlton and McGee, 49.

39. *MBTI Team Building: Leader's Resource Guide* (Palo Alto, CA: Consulting Psychologists Press, 1992), 69.

40. Knowlton and McGee, 49.

41. Ibid., 45.

42. Ibid., 12-16.

43. William C. Jeffries, *True to Type—Answers to the Most Commonly Asked Questions About Interpreting the Myers-Briggs Type Indicator* (Norfolk, VA: Hampton Roads Publishing Company, 1990), 50. Isabel Myers-Briggs and Mary McCaulley, *Manual: A Guide to the Development and Use of the*

Myers-Briggs Type Indicator (Palo Alto, CA: Consulting Psychologists Press, 1985), 45.

44. Ibid., 47.

45. Ron Schultz, *Unconventional Wisdom—Twelve Remarkable Innovators Tell How Intuition Can Revolutionize Decision Making* (New York: Harper Business, 1994), 38, 82-83.

46. Ibid, 59. Both Schultz and Covey cite research supporting female advantages in intuitive capacities. Stephen Covey, "Transforming a Swamp," *Training and Development* 47 (May 1993): 44.

47. Ibid.

48. Lieutenant Colonel Mike McGee, USA, Professor of Behavioral Science at the Industrial College of the Armed Forces, provided MBTI data to the author via e-mail communications regarding MBTI and gender.

49. The author interviewed the 19 U.S. female students in the class of 1997 at Air War College to obtain information regarding type for this paper. It is curious that the Air War College data seem inconsistent with data for female students at the Industrial College of the Armed Forces. Are female students at the latter institution dissimilar or are test data presented differently to identify true type versus adaptive type?

50. Perry Smith, *Taking Charge—A Practical Guide for Leaders* (Washington: National Defense University Press, 1986), 1-10.

51. Covey, 44.

52. Patricia Aburdene and John Naisbett, *Megatrends for Women* (New York: Villard Books, 1992), xxii.

53. Rianne Eisler, *The Chalice and the Blade: Our History, Our Future* (San Francisco: Perennial Library, 1987), details differences between male and female societies.

54. Quoted in Aburdene and Naisbett, xxii.

55. Christine McNulty, "Applied Futures," lecture, Air War College, Maxwell AFB, AL, December 11, 1996.

56. Colonel John Warden, USAF (Ret.), lecture, Air War College, Maxwell AFB, AL, December 20, 1996.

57. Sally Hegelsen, *The Female Advantage—Women's Ways of Leadership* (New York: Bantam Doubleday Publishing Group, 1990), 49-51.

58. Ruth H. Howes and Michael Stephenson, *Women and the Use of Military Force* (Boulder, CO: Lynne Reinner Publishers, 1993), 212.

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62. Knowlton and McGee, 9-10.

63. Howes and Stephenson, 36.

64. Ibid., 5.

65. Ibid., 4.

66. Michelle S. Fincher, "Gender Role Orientation of Female Cadets at the U.S. Air Force Academy," Research Report No. AFIT/CI/CIA-93-075 (Wright-Patterson AFB, OH: Air Force Institute of Technology, 1993), 3-4. Although these behaviors have traditionally been identified as masculine, this may be changing with the continued integration of women into nontraditional career fields.

67. Howes and Stephenson, 44.

68. Ibid.

69. Ibid., 210.

70. Carl Builder, *The Icarus Syndrome* (New Brunswick, NJ: Transaction Publishers, 1994), 231.

71. Ibid., 231, and Daniel M. Ogilvie, "The Icarus Complex," *Psychology Today*, 1, no. 11 (December 1968): 31.

72. Elliot Grumer, "Women as POWs—Forgetting the Rhonda Cornum Story," *MINERVA: Quarterly Report of Women and the Military* 14, no. 1 (Spring 1996): 12.

73. Captain Becky Colaw, "Team Air Force: Strength through Diversity," *Airman* 38, no 6 (June 1994): 36-48.

74. Mary McCaulley, *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator* (Palo Alto, CA: Consulting Psychologists Press, 1985).

75. Ibid.

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78. Judith Tingley, "Communication: Bridging the Gender Gap," *Healthcare Administration* 71, no. 4 (April 1994): 22.

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<u>6</u>

BREATHING NEW LIFE INTO DEAD RECKONING

A PROPOSAL FOR THE NEXT NATIONAL SECURITY STRATEGY

CHRISTOPHER P. MCNAMARA

Dead reckoning. 1. Navigation. A method of estimating the position of an aircraft or ship without astronomical observation, as by applying to a previously determined position the course and distance traveled since. 2. Calculation based on inference or guesswork.[1]

H ISTORIAN HENRY ADAMS WROTE THAT THE AMERICAN PRESIDENT "resembles the commander of a ship at sea. He must have a helm to grasp, a course to steer, a port to seek." The course and port constitute the first requirement for presidential greatness, and great presidents possess, or are possessed by, a vision of an ideal America. Their passion is to make sure the ship of state sails on the right course.[2] History is speaking to President William J. Clinton. Now into his second term, Clinton seems to have the prerequisite

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vision. He knows his destination, and he knows its general direction. Steering the best course poses a greater challenge. To extend the analogy, powerful storms can disorient the unwary mariner as he tries to navigate the high seas of domestic and international politics. He must grasp the helm firmly to resist buffeting forces; and, he must adjust his course periodically to compensate for a capricious environment. The able mariner needs both compass and helm. A president, a great president, needs a strategy.

President Clinton has at his disposal the appropriate device. The national security strategy (NSS) is presented annually to Congress by the President as required by the Goldwater-Nichols Act of 1986. There is valid argument that the first several versions of the NSS made for poor strategy and that the document's shortcomings were dictated by the process that produced it.[3]

Has this President learned from the mistakes of his predecessors? Has he configured his strategy-making process in a way that will place the ship of state on a course headed fair into the 21st century? Let's assess the Clinton administration's latest NSS and the process that created it, to form a procedural alternative that may improve future submissions.

ON STRATEGY

Strategy is a design for relating means to ends.[4] National security strategy is a nation's design for relating the resources at its disposal—the instruments of national power—to the securing of its interests. These simple definitions tend to obscure the complex challenges facing today's would-be strategists. Some commentators on the subject, Samuel Huntington and Edward Luttwak among them, suggest that these challenges are beyond the capacity of the American statesman. Huntington claims that the notion that the United States could produce national strategy is nothing more than a chimera.[5] Luttwak agrees, describing strategic thinking as antithetical to the American cultural tradition of pragmatic, short-term problem solving.[6] There is evidence to the contrary, however. National Security Council (NSC) 68, the document that codified the

ends and means of the Cold War, is considered by some a masterpiece of national strategy. And since 1986, we have produced nine versions of the National Security Strategy of the United States.

So, why the skepticism of Huntington and Luttwak? First, good strategy is hard to create. A design for relating national means to national ends must be complex and richly textured. The strategy's complexity is determined by two factors: the number and compatibility of the objectives, and the environment within which the strategy will be executed.

The decision to take a strategic approach implies a rational effort to apply limited resources to achieve a set of objectives, and such an approach forces choice. The strategist first must choose those objectives that are worth the expenditure of limited resources—he or she must set priorities.

The environment of a national security strategy also dictates its complexity. The environment includes domestic and international dimensions. It is populated by threats to national interests, competition for finite resources, and the resources themselves, including the talents, needs, and potential of the American people. The environment is dynamic; it changes over time and warrants constant measurement. Threats can wax or wane; the characteristics of the constituencies to which the national leader is tied can shift. Witness our own era; it would be difficult to find another 10-year period of relative peace during which the strategic environment changed so dramatically.

In addition to the integration of objectives, resources, and environments, an effective strategy must be endowed with the following characteristics:

- Achievable: The means must be commensurate with the ends. The strategy must be plausible.
- Measurable: Objectives must be defined in a way that makes achievement and interim progress apparent. The strategist must be able to recognize if and when an adjustment to the strategy is required.

- Articulated and communicated: Those charged with executing the strategy must understand the plan. The NSS must clearly describe the support required of the bureaucracy, the Congress, the American people.
- Culturally and politically resonant: The NSS should inspire the support described above. It must speak to the real world, recognizing the values and concerns of its various audiences, including the people, Congress, the media, the bureaucracy, and international friends and foes.
- Informed choice: The NSS must provide the guidance necessary for subordinate agencies to recognize which of several competing priorities should be satisfied first, second, third, etc..

Indeed, creating effective strategy is a difficult task. Our record in that effort since NSC-68 is the second explanation for the skepticism of Huntington and Luttwak.

Strategic thought in the United States between 1950 and 1986 was moribund. No official document during that period qualifies as a worthy successor to NSC 68. Perhaps our leaders were content with the stability of the Cold War. In 1986, however, Congress demanded from the White House a national security strategy. The Goldwater-Nichols legislation requires a comprehensive NSS consistent with an earlier definition: "proposed short-term and long-term uses of the political, economic, military and other elements of national power . . . to promote the [national] interests and objectives."[7] The President must submit the report annually with his budget, in both classified and unclassified form.

Prior to the Clinton administration, the NSS never accompanied the budget submission. None of the three Presidents subject to the law has submitted a classified version. If the letter of the law has been loosely enforced, has the President at least submitted a strategy consistent with the characteristics described above? No. The language in the strategies to date is too general and imprecise to be useful in prescribing courses of action. Of the 45 pages that make up the 1996 version, some 20 pages are devoted to the administration's national security achievements over its first 3 years

in office.[8] These are considerable, but they do not constitute a strategy for the future.

NSS-96 is polished, well written, and replete with the rhetoric of strategy. It has succeeded in shedding the language of the Cold War, focusing more appropriately on economic strength than on countering military threats. It does not, however, engage in the difficult parts of creating strategy. It does not, for example, prioritize among interests competing for finite resources. It does not inform choice.

The most telling feature of NSS-96, as with the earlier versions, is its obscurity. Indeed, the annual submission has not been debated in Congress since the first, in 1987. Prominent members of administrations past and present, along with academics and journalists, either are unaware of the document or dismiss it as something other than strategy.[9] The NSS to date has been neither politically nor culturally resonant.

A member of the NSC staff that put pen to paper for the 1988 version offers a cynical but telling explanation for its imprecision and obscurity:

> What President in a fast-paced, media-oriented world wants to articulate, in a static, written report . . . a detailed statement of his forward-looking strategic vision? If there was ever a sure-fired means of ensuring that your boss would be "hoisted on his own petard", this was it. . . . To influence resource allocations, it was considered far better to report "Globaloney" to Congress.[10]

Admittedly, the NSS is and must be a political document. But, is there another reason for its shortcomings, a reason that lends itself to constructive criticism and corrective action?

ON PROCESS

Process is a systematic series of actions directed to some end.[11] In the case of creating strategy, the components of the process include direction, net assessment, design, resource allocation, and actors.

• Direction. In a broad statement of vision, values, and principles, a leader provides guidance to the rest of the process. In the case of the NSS, the President should perform this function. His vision statement begins to inform choices and suggest priorities for ensuing stages of the process.

• Net assessment. This activity involves the collection and analysis of information relevant to the design phase of the process. Net assessment describes the environment: available resources; competition for those resources; and threats to the values, principles, and interests articulated in the vision statement. It predicts the future environment based on current trends. The intelligence establishment and the agencies subsequently charged with executing the strategy perform collection and analysis. The assessment writ large, however, must be performed by someone above the bureaucratic fray, someone other than the collectors and analysts. That someone must be able to discern institutional bias: has an agency exaggerated its circumstances, its competitive environment, in order to garner more resources? Assessment must be performed by those with a demonstrable appreciation of the big picture— by the strategists.

• Design. This is the pivotal action in the process, the point at which means are conceptually related to ends. The strategist must formulate specific, achievable, and prioritized objectives consistent with both the President's vision and the net assessment. He must translate the design into written form, in actionable terms. In so doing, the strategist communicates the design—the strategy—to the President, who subsequently communicates it to subordinate departments and agencies, to Congress, and to the American people.

• Resource allocation. This is the first point at which the strategy can be measured by tangible results. If it has been articulated and communicated, if it is politically and culturally resonant, if it informs choice, then resources will be appropriately allocated by subordinate departments and by Congress.

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- Actors. The roles played by the President, Congress, and the bureaucracy are reasonably well defined. But, what of the National Security Strategist? The skills and duties described would challenge even a Renaissance man. The challenge is more the domain of a group of strategists, capable of thinking without partisan prejudice. A more realistic alternative, perhaps, is a bipartisan group of strategists.

The current NSS process has not evolved significantly since its inception in 1987.[12] It begins with a tasking from Congress, not the President. The NSS is compiled principally by the NSC Staff, specifically by military officers within the office of the Senior Director for Defense Policy. They lay out the structure of the document and draft the introduction based on their reading of the past year's Presidential statements. They task various departments and agencies to prepare their appropriate sections of the document, providing the draft introduction as guidance.

The coordinators incorporate these sections from interagency participants into a composite draft, which is then circulated to the NSC Staff Senior Directors for concurrence and comment. Following an editorial review by the National Security Advisor, the final draft is transmitted to Department Secretaries, Agency Directors, and the Chairman of the Joint Chiefs of Staff. In 1991, only the Chairman replied with an editorial input. In 1996, NSC staff coordinator for the NSS at least insisted on a written response from those to whom the draft was submitted. In both years, unanimous concurrence was achieved on the first circulation.

The President offered no guidance to and engaged in no dialogue with his strategists. In fact, the "strategists" were staff members chosen for their positions to perform other tasks, based on criteria appropriate to those primary tasks. They were not selected for their skills as strategic thinkers. (That at least one of those interviewed is a most proficient strategist is only serendipitous.) At no point in the development of either NSS-91 or NSS-96 did any individual or group of participants engage in a net assessment of the geopolitical situation.

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A BETTER WAY

A strategic approach implies that strategy guides resource allocation decisions. If decisions are to be governed by a bigger picture than a mosaic created by narrowly focused interest groups, then the debate must be framed by a strategy. This argues for a carefully crafted strategy-making process. If one studies successful strategies of the past, like NSC-68 and the corporate world's approach to strategic planning, several important principles emerge that might guide the development of an effective process:

- *Strategy lasts, so you better do it well.* This poses an important paradox. Strategy is really no more than a design for dealing with an uncertain and changing environment; no strategy should be carved in granite. Yet history tells us that, once committed to a strategy, nations generally stick with it until a catalytic event occurs. This is true whether the strategy is formally adopted, as was NSC 68, or tacitly accepted, as was isolationism in the aftermath of the First World War. This principle argues for selecting the best and the brightest to write the strategy, men and women with little or no institutional loyalties, a group capable of grasping the big picture and giving it historical perspective.

- *A dynamic environment demands permanent process.* Strategies devised by governments last mostly because of institutional resistance to change. Short of precipitating catalytic events, the solution requires an institutional adjustment, one intended to recognize the need for, and then to foster, change. This is the corporate approach to strategy developed by such companies as Hewlett-Packard. Care must be taken, however, to change occasionally the population of the process, to infuse the best and brightest with fresh faces.

- *The leader must "own" the strategy.* A national strategy is going to be closely identified with the President. He must, therefore, be directly involved at key points in the process. He must engage in face-to-face dialogue with the strategists in developing a strategic vision that will thematically drive the design. He

must then officially promulgate the strategy in writing. The process should commit the President to something that reflects his thinking, not just that of his strategists. An official strategy committed to writing provides the bureaucracy with something on which it can take action.

- *Strategists need the freedom to be wrong.* Strategy development is not a science. The complexity and dynamism of the environment argue for a cyclic process, one that routinely assesses the effectiveness of the original product. Strategists need to know that their product will not lead the nation down a path from which there is no recourse. The unfortunate alternative is a shortsighted, narrowly focused product. Likewise, the President needs to provide his strategists with reasonable insulation from various interest groups with a stake in the final shape of the strategy. If pressure is brought to bear to satisfy each of these groups, the result will be a nonactionable document without a prioritized scheme of national interests, much like NSS-96.

Can we create a better strategy by employing these principles, one that will better serve the President and the nation? Probably, if we establish (by Executive Order) an Office of National Strategy (ONS) within the Executive Office of the President.

Organizational Setting and Relationship
Such an office would be separate from the current national security apparatus. It would be, in other words, "off line." It would report directly to the President on matters of strategy and to the White House Chief of Staff for administrative purposes. It would have complete access to information held by all executive agencies and departments and would call upon them to provide information for purposes of analysis and assessment.

ONS must be off-line in order to minimize layers between the President and the strategists with whom he should have regular dialogue. This is the President's strategy staff. The tendency of cells embedded within any extant bureaus is to become engaged in the

current operations of that bureau. This is especially true of the logical home for national security strategists, the NSC staff, which traditionally has been dominated by a political-military perspective at a time when national interests are expanding beyond defense and foreign relations. National strategists must look beyond the interests of any one organization.

Internal Organization and Composition
ONS should consist of two groups. The first, the Strategy Development Council (SDC) would consist of a group of about 10 prominent thinkers, writers, and practitioners, successful men and women of national and international renown from a variety of backgrounds, who would convene periodically, and should be of cabinet-level stature. They might be individuals from either political party or individuals simply too controversial to survive the confirmation process. Two members of the SDC would be proposed to the President by a conference of House and Senate leadership—they would be elected officials such as governors, mayors, state legislators, or Members of Congress. The President would select the remaining members of the SDC.

The composition of this group may be the most important, albeit the least concrete, aspect of this proposal. It must be emphasized that a strategic enterprise is bound to be enriched if party affiliation is ignored in the selection process. There is a wealth of talent throughout America and across disciplines, professions, and party lines.

The SDC would be complemented and supported by a permanently assigned Strategy Development Staff (SDS) consisting of about four strategic specialists drawn from the corporate world, academia, and government. Together the two groups would develop the initial strategy and conduct biannual reviews and updates.

The permanent SDS would also monitor the execution and effectiveness of the strategy between regular reviews. It would conduct liaison with those other agencies required for net assessment, as well as interact with the Congress on all matters

relating directly to the strategy. The SDS would be headed by a director who would facilitate and coordinate the efforts of the two groups in their strategy design, but would not exercise authority over the SDC. (The position should not be construed as the national strategist.) The director would also recommend to the President special meetings of the SDC when events warrant.

The ad hoc character of the SDC is intended to overcome the incrementalism that plagues our government. The purpose of the SDC is to provide the fresh look often needed to jar an organization out of comfortable complacency.

The SDS, on the other hand, is needed to ensure that the strategy, once promulgated, is being executed. It should also serve the President as the agent of change; that is, it should educate other agencies about the strategy and its intended implications. The SDS could advise other agencies on how to act strategically as an organizational unit within the framework of the national strategy.

The size of both groups is small by usual standards for a task of this breadth and import, but with good reason. If participants of the desired caliber and stature are to be attracted, they must be assured that their input will be a substantial factor. A common-sense test was also applied to the size; the group should be able to work comfortably around a conference table at key points in the process: to receive information, to discuss it, and to select an outcome. This must be a responsive group that can deliver an actionable product.

The Product
Twice during each presidential term the ad hoc group, the SDC, would convene in concert with the SDS to produce the National Strategy of the United States, or a revision thereof. Any substantive changes to a previous edition would be summarized in a preface. The strategy would be promulgated in the form of either an Executive Order or a National Security Decision Directive. The strategy should be in the hands of subordinate agencies and departments at least 6 months prior to the subsequent budget submission to Congress. This adjustment to the current annual

submission schedule will require legislation to modify the Goldwater-Nichols Act.

Each alternate year, the SDS will prepare a report to the President on the Strategy's effectiveness using specific, quantifiable measures of effectiveness designated by the SDC when the Strategy is first developed. A copy of the report will be provided to Congress. The strategy should be closely held until after it has been presented to and discussed with a bipartisan conference of congressional leaders. At that point it may be released to the public.

National strategy must be issued as a directive if it is to govern the application of national resources to national objectives. Subordinate agencies must abide by its guiding principles and priorities; they must understand that their performance will be measured against criteria established in the strategy.

The timing of the strategy is intended to ensure that subordinate agencies understand their objectives when requesting resources. There must be a rational and perceptible relationship between objectives and resources. Congress deserves a coherent justification when authorizing and appropriating funds.

The strategy in its early draft stages must be closely held so that the President, his strategists, and the congressional leadership will be free to discuss controversial means for safeguarding national interests without fear of public anxiety about, for example, the future of various entitlement programs. Strategy, after all, is supposed to be an expression of presidential leadership, not a reflection of every public preference. It should not be subjected to potential partisan or media sabotage until it has extracted the full benefit of the entire process. We cannot stop the march of time and events, but strategy's capacity to lend order to a noisy debate rests in its creation in a forum removed from the din.

CONCLUSION

Even the best navigator, wielding a finely tuned sextant or the latest in nautical electronics, can report to a captain only on where they have been, on seas that have already been traveled. The true seaman applies his hard-earned skills to the projection of where he

will be and to actions that will get him there with precision. So it is with the national strategist. A national strategy document laden with past accomplishments and policies may serve a political purpose, but it will not serve a strategic one.

NSS-97, the first of President Clinton's second and final term, presents a unique opportunity. If seized, the President could present a clear and detailed vision of where America is headed and how it will get there. He could do so unconstrained by concerns with re-election—but only by modifying the process.

This is not to contend that the relationship between process and strategy is that of a simple "if A, then B" proposition: configure the right process, and effective strategy will emerge. That proposition ignores factors of motivation, will, and politics. The perfect process will not achieve success unless the leader recognizes the need for a strategic approach and perceives that need to be sufficiently urgent to warrant coopting or compelling those elements of the organization that are not convinced by the merits of the strategic argument. The best we can work toward is a procedural framework that maximizes the opportunity for success.

We can certainly see the obverse of the earlier proposition: configure the process poorly, and good strategy will not result. A process that does not employ strong leadership and vision, net assessment, and a sophisticated design is condemned to dead reckoning—to guesswork.

NOTES

1. *Webster's Ninth New Collegiate Dictionary* (Springfield, MA: Merriam-Webster, 1985).

2. Arthur M. Schlesinger, Jr., "The Ultimate Approval Rating," *The New York Times Magazine,* December 15, 1996, 50.

3. Christopher McNamara, Michael Landrum, Joseph Corcoran, and Richard White, *Making National Security Strategy: Process, Paralysis, and a New Path,* National Security Program Discussion Paper Series 92-04 (Cambridge, MA: John F. Kennedy School of Government, Harvard University, 1992).

4. James D. Watkins, "The Maritime Strategy," *Proceedings,* preface to Special Supplement (Annapolis: U.S. Naval Institute, 1986).

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5. Samuel P. Huntington, "The Evolution of U.S. National Strategy," U.S. National Strategy for the 1990s, ed. Daniel J. Kaufman (Baltimore and London: Johns Hopkins University Press, 1991), 11-18.

6.   Edward N. Luttwak, *On the Meaning of Victory* (New York: Simon Hill, 1982), 243.

7.   50 U.S.C. 402, Title I of the National Security Act of 1947.

8.   The White House, *A National Security Strategy of Engagement and Enlargement* (Washington: Government Printing Office, 1996).

9.   These reactions were offered by a series of guest speakers at the National War College during the period August-December 1996.

10. Don M. Snider, *The National Security Strategy: Documenting Strategic Vision* (Carlisle, PA: U.S. Army War College, Strategic Studies Institute, 1992), 4.

11. *Webster's Ninth.*

12. This description of the strategy-making process was developed through personal interviews with Rear Admiral Don Pilling and Captain Joe Sestak in September 1991 and December 1996, respectively.   Each headed the office within the NSC Staff responsible for compiling the NSS documents in those years.

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7

SPACELIFT

SEARCH FOR
A NATIONAL VISION

DAVID M. RIESTER

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SPACE: THE FOURTH DIMENSION

NATIONAL SECURITY INTERESTS REQUIRE A LONG-RANGE VISION that provides assured, reliable, and affordable access to space. A careful examination of historical national security interests reveals a consistent emphasis on ensuring our survival as a nation, securing the lives and property of our citizens, and protecting our vital national interests. In the 19th century, securing the sea lanes provided the single most important avenue for advancing those interests.[1] The advent of air power added another vital approach in the early 20th century. The growing importance of space power to the economic, political, and military health of a nation has added a new critical avenue in the closing years of this century. As space becomes more vital to the nation's 21st century lifeline, several factors require attention. The nation must have a long-range vision

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of how to exploit space, leadership capable of executing that vision, and proper funding to ensure it is successful. The stakes are high. Nothing less than space dominance can guarantee our survival the next century.

The United States is becoming increasingly dependent on space assets for the conduct of peacetime and wartime military operations. The Gulf War was the first "space age" war in which space-based assets played critical roles in communications, navigation, weather prediction, missile launch detection, and intelligence gathering. Future military actions will all depend heavily on space-based assets.[2] Spacelift is not only crucial to access space but remains the only method for deploying on-orbit space assets today. The United States can't afford to become a second-rate space power because of a failure to provide adequate lift capability.

Modern warfare demands that our Armed Forces fight as a joint team in uncertain environments, with space control serving as the key enabler for success. Future warfighting, according to *Joint Vision 2010,* "embodies the improved intelligence and command and control . . . to develop the four operational concepts: dominant maneuver, precision engagement, full dimensional protection, and focused logistics."[3] The proper exploitation of space is vital to the way we choose to implement all four concepts. Denying enemy eyes and ears space access will continue to allow surprise in Army dominant maneuvers, like the left hook in Operation *Desert Storm.* Friendly eyes, ears, and navigation precision will allow precision engagements from air and space platforms like the airborne laser lab. Space control is a key requirement for force protection. It ensures that future enemy threats from air, sea, land, or space, such as theater ballistic missiles, with or without weapons of mass destruction, are detected and negated earlier and farther out. Bar-coded logistics read from space will ensure lighter and cheaper footprints abroad and faster resupply to future forces. Space, and reliable access to it, is a vital enabler for successful future peacetime and wartime operations across all services and all levels of conflict.

The new, emerging form of warfare is dependent on vast amounts of information. It will replace old concepts with warfare

fought in compressed time, using precision and seeking to exploit parallel attack to achieve specific effects. "By 2010 . . . the most intense joint operations . . . instead of relying on massed forces and sequential operations, . . . will achieve massed effects"[4] with information superiority, a more lethal battle space, and new operational concepts: dominant maneuvering, precision targeting, full dimensional protection, and focused logistics. The definition of mass is no longer large numbers. Mass is now precision delivery in parallel war. Recognizing the vital nature of space to these operations on September 19, 1996, the President released his national space policy: "This policy, among many other things, directs the nation to maintain its pre-eminent position as the world's no. 1 space power in order to assure support for terrestrial military/civil operations. Like air power, control and access to the benefits of space, space power must be maintained and protected."[5] This type of strategic vision places the proper emphasis on space dominance but requires significant additional thought for successful application. Six years of thought after the Gulf War haven't brought consensus on this problem, even though all parties recognize the need for controlling space. Given the immediate domestic priorities, quadrennial defense review, and shrinking defense budget, services are too focused on traditional organizational survival and behavior to recognize or prioritize properly the importance of space.

Space control or space dominance provides a series of vital benefits for the joint force commander. These developing concepts are very similar to the ideas of sea control or air dominance. However, unlike these older concepts, space control allows dominance across all mediums of communication and transportation. Space control promises to allow domination of air, land, sea, and information. Even now it prevents adversaries from interfering with operations of air, space or surface forces, and assures freedom of action and movement. Space is the ultimate high ground:

> Space . . . answers the age-old wish of military commanders to be
> able to see the other side of the hill. Variously defined in the past
> as both a place and a mission, space is also a laboratory of the

> unknown; a potential area for commercial exploitation; a medium
> in which surveillance, communication, navigation, and transit are
> now routine; and an arena of increasing cooperation, competition,
> and potential conflict.[6]

Furthermore, air and space control is a critical enabler for the Joint Force because it frees U.S. forces from fear *of* attack and leaves them free *to* attack. Air and space superiority gives joint forces the ability to dominate enemy operations in all dimensions—land, sea, air, and space.[7] As a result, air and space superiority is a strategic imperative for protecting American lives throughout a crisis or conflict.[8] Dominant maneuver, full-dimensional protection, surface maneuver, strategic attack, and interdiction are vital to battlefield success and are not possible without air and space superiority. This means everything on the battlefield is at risk without air and space control.[9] If air and space dominance is achieved and joint forces can operate with impunity throughout the adversary's battlespace, the joint force commander will quickly prevail, efficiently and decisively.[10] The Chairman's vision simply states: "Persuasive in Peace, Decisive in War, Preeminent in any form of conflict."[11] Air Force Chief of Staff General Fogleman, predicts "American forces in future years will be facing an increased array of threats from space," adding that the United States must "not allow an adversary to control space, to have the upper hand in space."[12] If operations in and control of space are vital to enhancing future United States national security, then assured, reliable, and affordable access to space is the critical requirement and enabler that will require cohesive long-term vision, leadership, and funding for implementation. In future war, the failure to maintain space control will mean that air superiority, ground operations, and sea operations will be impossible.

Accessing Space

Before a coherent long-term vision for access to space can emerge, it is important to understand the legacy of spacelift in terms of infrastructure, people, and economic competitiveness. Today, the

United States relies primarily on an army of military and civilian personnel to operate a series of continuously modified Atlas, Delta, and Titan boosters. These were originally developed in the 1950s and 1960s as Intermediate Range Ballistic Missiles (IRBMs) and Inter-Continental Ballistic Missiles (ICBMs), to access space for military missions. The Space Transportation System (STS) (space shuttle) flies civil scientific missions but also has the capability to fly military payloads. Meanwhile, commercial launches, mostly geostationary communications satellites, are contracted and flown aboard U.S. nonshuttle or foreign launch vehicles, depending on cost, risk of failure, and scheduling constraints. This situation is illustrative of the chaotic nature of the launch system. Lacking a clear understanding of all space needs, various organizations have tended to create systems to fulfill their needs alone. This has and will continue to result in cost and use inefficiency.

The Legacy
The U.S. space launch system faces serious problems with physical and technological obsolescence. The system consists of three primary space launch elements: infrastructure, ranges, and vehicles. Real property facilities and equipment of our launch bases built in the 1950s and 1960s, such as roads, rail, power distribution, water, sewer, roofs, toxic waste storage areas, and environmental control systems for launch vehicle handling and processing buildings, are in need of repair or replacement. Natural decay, corrosion, and ocean salt spray have taken their toll. Inefficient range operations, architecture, and support capacity providing command, control and communications, telemetry and tracking, meteorological support, and safety systems and measures such as radar and command destruct mechanisms grew up from the individual collection of dedicated stove-piped weapons system testing requirements of the 1950s and 1960s into the range infrastructure we have today. These systems are obsolete and degraded resulting in frequent failures and a crisis of no source for spare parts. This makes U.S. range assets overly expensive to operate and maintain.[13] Also suffering age and design deficiencies, Atlas, Delta, and Titan launch vehicles, with

their research and development ballistic missile heritage, have fared no better than range assets. Tied to an inefficient architecture—vertical integration on a limited number of launch pads and multiple upgrades to increase reliability and capacity—they have resulted in higher launch costs (Titan IV now costs $250 to $300 million per launch), longer processing times, and less operational flexibility. The combined effects of these problems are already being felt in the form of launch delays, launch manifests over a year long, and ever increasing costs of operation. Consequently, systems continue to age in an era of constrained budgets with no coherent vision of where space is supposed to proceed in the next century. Assured, reliable, and affordable access to space has become more elusive.

The lost connection between space and ICBM operations is another example of an area that needs reform. In the past, military Strategic Air Command (SAC) personnel acquired ballistic missiles (Atlas, Titan, Minuteman, and Peace Keeper) through Air Force Systems Command. Military personnel then accepted missile components and stored, assembled, operated and maintained the missiles on alert as part of the U.S. nuclear deterrent force. Conversely, space launch operations continued as research and development (R&D) contractor operations with military oversight. With the changes in the world environment, SAC is gone, large numbers of the ICBM fleet have been demobilized, military personnel with launch expertise have been shifted to other programs, and an entire contractor support system remains for launch operations. These shifts and changes have not been coherently applied according to any serious strategic vision that would exploit the best of both worlds, keep intact a system that prepares military personnel for future military launch missions in the 21st century, and reduce costs, all while eliminating obsolete infrastructure and systems.

From the 1950s through early 1980s, the United States enjoyed a virtual monopoly on the building and launching of commercial and military satellites on expendable launch vehicles (ELVs). DOD abandoned future expendable launch vehicles and relied on the

shuttle because of an absence of a coherent and integrated civil and military launch vision and economic pressures to reduce projected Space Transportation System (STS) costs. The United States, as one of only a few established spacepowers, built and launched almost 100 percent of the Western hemisphere's satellites. Commercial payloads back then were scheduled for the shuttle, as NASA sought to make the partially re-usable shuttle more economically viable by ensuring and projecting multiple uses per month. With the Challenger disaster in January 1986 and subsequent freezing of future shuttle launches for 2 years, U.S. access to space came to a standstill, which gravely impacted U.S. national security.

Policy makers, engineers, and scientists learned enormously valuable lessons from this experience. First, national security payloads and schedules had to be delayed or reconfigured for alternate launch vehicles if they could be found. Second, commercial payloads were bumped for national security and military payloads—launch manifests exceeded 2 years and continue to be backlogged today. This forced commercial builders and users to look elsewhere. Nonmarket economies such as China and Russia, or the up and coming European and then Japanese space launch systems, offered a way to fill the gap. Third, restarting the expendable launch structure would take years and be expensive. Because all future ELV development had been cut, there was no future system in design—new systems would take a decade to field. Fourth, the United States could ill afford to be left with only one method of access to space. A corollary—manned space launch—was always inherently more expensive ($ per pound-to-orbit), more complex, and thus riskier than ELVs. This meant the in-place but decaying and obsolete infrastructure had to meet a revised vision of spacelift. The United States had suddenly become noncompetitive in space-launch capability.

TRAPPED IN A DILEMMA

Current U.S. launch architecture is noncompetitive, because American launch providers and satellite manufacturers maintain a research and development approach that prevents launch operation

normalization, which keeps U.S. launch vehicles difficult and expensive to process. Current space-launch capability represents a patchwork of systems with tremendous cost inefficiencies. The United States employs a mix of manned and unmanned space launch systems. These are highly leveraged in terms of cost, schedule, and efficiency by the shuttle decision and subsequent shuttle disaster. The current launch fleet is mostly expendable (Delta, Atlas and Titan families), with a partially reusable Space Transportation System (shuttle) providing manned access to space. The core vehicle technologies are 1950s and 1960s vintage, even though continual upgrades have stretched the operation envelope to its present maximum making each launch a one-of-a-kind R&D event. As a consequence, large standing armies of military and civilian personnel are required to support each launch. The Augustine Report of 1990, the Aldridge Study of 1992, the NASA Access to Space Study, the 1993 DOD Bottom-Up Review, and the 1994 Moorman Report all made recommendations to improve launch operations.[14] Only the NASA study advocated a reusable launch system as a primary recommendation. Status-quo, development of a new expendable, and mix of reusable and expendable launch vehicles were the primary recommendations by all others.[15] While these types of recommendations are bureaucratically safe, they are not the best answer to the nation's space needs.

The new U.S. procurement paradigm hopes to change the noncompetitiveness of current launch architecture by reducing the time and costs of future launch. Driven by affordability issues, the Evolved Expendable Launch Vehicle (EELV) will introduce a new paradigm that avoids "performance at the margins" and associated high costs. Air Force Secretary Sheila E. Widnall addressed this issue at a U.S. Space Foundation's national symposium. She stated that a new acquisition process driven by affordability issues will drive down EELV costs.[16] EELV modernization benefits government and commercial launch. This new paradigm seeks to suppress technical elegance in favor of cost-effective solutions, commercial specifications, minimal paperwork, and 30-day launch

cycles.[17] This is a significant step forward, but it must be integrated into a broader vision that takes more into account than simply launch vehicles.

The DOD-sponsored EELV is an immediate, interim, and necessary cost-savings solution, but the NASA-led Reusable Launch Vehicle (RLV) offers the most potential savings. Successful EELV contract performance requires a standard payload interface for each launch class and a cost reduction of at least 25 percent over present methods. The RLV potential promises very low launch costs, rapid call-ups for "last-minute" satellite launches, re-manifesting without penalty, and reliable space access.[18] Many of these claims mirror statements made about the shuttle system that were never met. NASA envisions airline-like operations, horizontal processing of the payload, and nominal 7-day turnarounds with a 2- to 3-day emergency call-up possible. Costs are estimated at $1,200 per pound to Low Earth Orbit (LEO) and $5,000 per pound to Geosynchronous Transfer Orbit (GTO).[19] A manned RLV is likely to weigh more, carry less, and be more expensive to operate than an unmanned RLV system. The EELV is seen by many as only an interim necessity for transition to technology that is 10 years away. It is, however, likely to be kept as a backup capability long past its design projection, like the B-52 bomber, which was designed for 20 years but kept in use for around 50. NASA's RLV technology promises to give DOD and Commerce the most timely, reliable, cost efficient, and commercially competitive access to space. EELV today and RLV tomorrow are the right mix to avoid the consequences of another Challenger disaster.

Manpower
The manpower equation continues to demonstrate a divergence of capability. ICBM operations are still military and becoming much smaller as reductions of missiles under Strategic Arms Limitations Talks (SALT) and the Strategic Arms Reduction Talks (START) are accompanied by a reduction of units and military experience in operations and maintenance. A further reduction, consolidation, and reorganization resulted at the end of the Cold War in Air Force

Systems Command (now Air Force Material Command) turning over space launch operations (Atlas, Titan, and Delta) to Air Force Space Command. The spacelift mission is now accomplished by the 45th Space Wing, at Patrick Air Force Base and Cape Canaveral Air Force Station, Florida, on the east coast, and 30th Space Wing on the west coast, under the operational direction of 14th Air Force, at Vandenberg Air Force Base, California This shift has far ranging consequences.

Patrick Air Force Base and Cape Canaveral employ approximately 3,500 military, 1,700 civil service, and approximately 6,700 contract personnel to accomplish their spacelift mission.[20] The 30th Space Wing at Vandenberg Air Force Base also employs enough military, civil servants, and contract employees to accomplish a spacelift mission for unique polar and retrograde orbits not safely obtainable from the east coast. Together this accumulation of military oversight and contractor performance comprises an army of personnel necessary today to achieve both military and commercial access to space.

Competitiveness

In terms of competitiveness today, the United States ranks highest in cost ($ per lb to orbit) in relation to Europe, China, and Russia but ranks at the top with one commercial Russian exception in terms of probability of launch success. Russia and China can launch for approximately $4,000/lb to low-earth orbit (LEO) in part because they are highly subsidized nonmarket economies. The European Ariane's goal is to launch for $8,000/lb to LEO; while the U.S. costs of Delta, Atlas and Titan average between $12,000-14,000/lb to LEO. This places the United States at a severe commercial disadvantage at the exact moment when space access has become critical.

Cost is not the whole story. Complexity and time to receive, process, and launch the payload as well as access to a launch pad on the launch schedule are also major military and commercial concerns. A typical U.S. example of a satellite launch illustrates the complexity of the process:

Space launch processing begins with planning for the arrival of flight hardware. Hardware can arrive via aircraft, truck, or even ship in some cases. Documentation is reviewed and updated to support the effort. Hardware arrives and is off-loaded at the receiving inspection facility. Once the hardware passes basic inspections, it is either stored or moved to a processing facility. At the processing facility, preparation of the hardware for launch begins. Build up and checkout takes place, various new checks are made to the built up hardware, and computer programming takes place. The hardware is moved to the launch pad and the spacecraft is mated to the booster. Destruct ordnance can be installed before hardware is moved to the launch pad or installed at the launch pad. Solid rocket motor boosters are also mated either just prior to the move to the pad (Titan) or while on the pad (Delta). Checks are conducted and the vehicle is basically ready for launch. This processing takes 35 (Delta) to 180 (Titan) days for a nominal timeline, but can vary considerably depending on how many modifications must take place for the specific payload being launched. [21]

A systematic analysis of this type of operation for the purpose of reducing time and saving money is vital for American competitiveness in space.

Back to the Future
The current political leadership has seen the need for significant change but often appears unable to select a direction. For example:

> Last summer, the Clinton administration crafted a national launch policy that takes a two-track approach. For the long haul, it proposes to develop a Reusable Launch Vehicle (RLV) that would drastically lower the cost of launching payloads to orbit. In the near term, U.S. launchers would be made more efficient by replacing subsystems with today's technology. [22]

New life and $2 billion over a number of years for the EELV will not be enough. The European Space Agency (ESA) spent over $6 billion to develop the Ariane launch vehicle. It has run out of

money to continue and is looking for additional roles for its rocket to recoup some of the development cost. As a result, U.S. options include buying the Ariane launch vehicle production for the United States, use it to launch Titan 4-class missions, and/or use a smaller version to launch Atlas-class satellites.[23] While these possibilities offer attractive financial advantages, the central problem remains— U.S. policy prevents launching military payloads on foreign vehicles and suffers from the "not invented here" mentality.[24]

The U.S. Government has laid out very specific guidelines for preventing the creation of dependency on foreign space sources. It has clearly mandated that "U.S. Government agencies shall purchase commercially available space goods and services to the fullest extent feasible and shall not conduct activities with commercial applications that preclude or deter commercial space activities except for reasons of national security or public safety."[25] Even more important, Congress restricted the Government from providing direct subsidies for commercial space purchases.[26] While these types of restrictions are understandable because of budget considerations, U.S. space launch policy still lacks a coherent process. The potential for conflict grows as numerous military, civil and commercial assets occupy two basic orbital locations, low and geosyncronous earth orbits. Because of the finite number of slots, high launch costs, and relatively small number of satellites needed for substantial Earth coverage at geosyncronous orbit, the trend is to build larger satellites or at least ones that hold more fuel. "Two major new industry assessments cite a sharp increase in both the number and size of new international communications spacecraft projected for development over the next several years."[27]

> The reports say that an average of more than 460 medium- and heavy-geosynchronous orbit communications spacecraft will be developed and launched through 2010. Although the reports cited no market financial projections, this level would be worth about $50-60 billion in commercially funded medium-heavy satellite and booster development around the world.[28]

This means there will be no relief from the demand for heavy launch vehicles and space access. Sounding the alarm, a recent report noted: "U.S. could lose its commercial viability to launch these new spacecraft unless it develops heavier launch vehicles, more comparable to the European Ariane 5, designed to place nearly 15,000 lb. in geosynchronous transfer orbit."[29] Even more critical if the United States doesn't take significant action by 2006 by developing larger boosters, "It could cede as much as 50% of the heavy communications spacecraft launch market to the Ariane 5, the Chinese Long March 3B and Russian and Ukrainian boosters."[30] Some efforts in international cooperation have been made: "The Russian Proton is tied with Lockheed Martin's ILS [PROTON international launch system] while the Ukrainian Zenit is tied with Boeing in the Sea Launch program"[31] Proton and Zenit have a 12,000-lb capability to geosynchronous Transfer Orbit (GTO). Recent forecasts of strong communications satellite development for geosyncronous earth orbit leaves the United States poorly equipped to compete. This demand will occur even though it is clear the current cost of expendable spacelift is high—from \$4,000/lb to more than \$12,000/lb to GTO depending on the country and system used. Reliable and competitive spacelift architecture is vital to U.S. prestige as a world leader:

> The lack of affordability and responsiveness of the domestic fleet led to a comprehensive look at the nation's approach to space launch during 1993-94. NASA's Access to Space Study in 1993 concluded that low-cost, reusable single-stage-to-orbit boosters had become feasible and should be pursued. Lieutenant General Moorman's Space Launch Modernization Study examined several options to reduce costs and improve the operations of launch systems. A dual-track plan was suggested, in which: (1) the DOD would "evolve" the current fleet of expendable launchers with the goal of reducing costs by 25% and, eventually, 50% over current values; and (2) NASA would embark on technology development culminating in an experimental reusable launch vehicle. Such systems might permit order-of-magnitude cost reductions and rapid turnaround on the order of days, approaching "aircraft-like" operations.[32]

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The best American response to this problem is to find some form of affordable and competitive spacelift system.

Observations
The manpower question also clouds the future of U.S. space control. Some contractors have pointed to the large array of military and civilian oversight of the east and west launch complexes as additional reasons why U.S. spacelift is noncompetitive, slow, and costly. Some clarification on this issue is necessary. American decisionmakers have examined three approaches to the problem:

- Commercial contracted services
- Cop on the beat military/civilian oversight
- Total military/civilian operations.

A few trends help clarify the correct future path for launch operations personnel. First, it is difficult to be sure that if spacelift is commercialized any one company or group of companies will invest the amount of money needed to ensure future U.S. access to space. In time of war or crisis it's not clear what U.S. national access to space would be available. Although commercial efforts desire to be competitive in terms of cost, they rarely require immediate access to space as the Government may for national security interests and objectives. Second, it is abundantly clear that military participation in space operations and control is growing, will continue to grow, and is here to stay. Just look at *Joint Vision 2010*, the Army *Full Spectrum Dominance* vision, and the Air Force *Global Engagement* vision. It is also clear that a cadre of military needs to be cultivated and protected for transition to future generation space operations—but that does not mean that all U.S. launch operations need to be military.

One solution is to have two launch pads, one east coat, one west coast, with standardized operations manned exclusively by military for future military access to space and the continuation of military participation in NASA's manned programs. At the same time, parallel commercial EELV launch pads on the east and west coasts

could provide surge capacity by military operators in times of national need. However, total military launch operations structure does not make economic sense in light of present and future U.S. domestic and economic realities.

These realities also cast doubt on current plans to continue use of the current fleet of U.S. launch vehicles beyond the turn of the century. The problem is that the continued production, operation, and maintenance of these vehicles are cost prohibitive for two reasons:

> 1) Escalating expenses associated with inefficient launch schedules and their extensive infrastructure, and 2) outdated technologies, designs, and manufacturing techniques. Current national spacelift facilities, processes, vehicles, procedures and supporting infrastructure are not standardized, making each mission a unique event. Planned replacement of the current fleet of launch vehicles must begin now if the necessary technologies and system concepts are to be available early in the next century to support the needed modernization and improvements to the nation's launch capabilities.[33]

Current reality is that commercial requirements dominated by geosynchronous medium/heavy communications satellites need heavy lift and want low launch prices and dependable launch schedules—competitiveness.[34] U.S. forecasts most military payloads require medium lift—only a few military launches per year require heavy lift. This means that military priorities are out of step with a much larger commercial requirement. It is more likely that the commercial potential, now estimated at 31 heavy launches per year, is a better indication of where the future demand will be for the globally expanding communications market, even if technology drastically increases the reliability of current satellite components or reduces the size and weight.

America's inherent launch inefficiencies limit commercial launch providers from successfully competing in the international commercial space launch market. Rising recurring costs, stovepipe launch suppliers, reduced production and launch rates handicap

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American capability still further. A single family of heavy lift
vehicles is the right competitive and operational answer for the
future.[35] Government and industry cooperation in creating a vision,
rebuilding infrastructure, and building the next generation of launch
vehicles is vital for guaranteeing future U.S. launch competitiveness.

VISION REQUIRES LEADERSHIP AND AUTHORITY

What the American military continues to do best is organize and
lead when there is a clear objective. It has a history of it and a
destiny to lead when it is in our national interests. Just look at the
difference it makes in any operation, warlike or humanitarian, when
the U.S. military arrives on the scene. In a like manner, the Air
Force, as the executive agent for DOD spacelift, has done an
excellent job of leading the development and stewardship of space,
despite the confines and limits of bureaucracies created within the
Government, DOD, and the Air Force.

The central issue to ensuring the future of space access is having
the leadership and authority set clear priorities. More than ever,
space now needs to be developed, husbanded, and protected so it
has the opportunity to emerge from ancient parochial interservice,
interdepartmental views, and the competing agendas of other
departments and bureaucracies in NASA, DOT, DOC, and the
Intelligence Community. In the future, Air Force leadership may
feel forced by roles, mission, and budget battles to leverage the
present to acquire the next generation fighter, F-22, or advanced
tactical fighter, in place of the funding required for access to space.
General Fogleman, Chief of Staff of the Air Force, advocated that the
Air Force may indeed become the Space and Air Force or face the
possibility of the creation of a fifth service. This obvious allusion to
the position that the Army developed in the 1920s and 1930s when
faced with "the potential of air power" is matched by some Air Force
leaders' indifference to the rise of space power. General Fogleman
noted that this is changing with the growing acknowledgment that
the United States must "not allow an adversary to control space."[36]
However, even the military has been fragmented on this issue. In
1993 an Air Force report noted competition among space acquisition

organizations such as the Air Force, Army, Navy, Ballistic Missile Defense Organization, Advanced Research Projects Agency, and National Reconnaissance Office resulted in fragmented responsibilities, and duplicate facilities, staffs, and infrastructures. These organizations were less effective by failing to achieve economies of scale, optimal existing capabilities, and validated operational requirements. In this instance competition resulted in noninteroperable space hardware and complicated operations.[37] This will cloud the military's ability to provide a leadership role unless significant internal reform takes place. This will prove extraordinarily difficult in a period of downsizing where careers and force structure are at stake.

Another problem emerges when the rising need for commercial access to space is compared to military needs. According to the 1994 Moorman report:

> Fewer satellites, with longer lives, perform more work, which has resulted in decreased launch rates and excess launch vehicle production and processing capacity. The accompanying negative effect is low, inefficient production rates that raise unit costs. In addition, a contributing factor to high vehicle costs is the frequent perturbations in launch schedules. For example, Atlas II and Titan IV program schedules have been stretched out 3 and 9 years, respectively. According to a Titan IV program representative, the program's stretched schedule increased development and procurements cost estimates by about $8.5 billion in then-year dollars.[38]

As a result, there is a negative impact on the ability of the United States to compete in the launch business. DOD must work to solve fragmentation, duplication, and compartmentalization.

Executive Space Policy Pitfalls
In spite of civil and military consensus on the need for a more cost-effective launch system, lack of continuous executive branch focus and leadership has failed in the last decade to field a new launch system. The Bush administration's policy had several problems. It

did not address how his administration expected to provide effective management oversight for future space transportation evolution and development. This point is critical because of the Government's prior poor experience in accomplishing this mission. The Bush administration's attempts to solve the launch problem by simply directing DOD and NASA to undertake the joint development of a new space launch vehicle has also essentially been judged a failure.[39] Examples include:

- Failure of the administration and Congress to come to grips with the future course of space launch systems[40]
- NASA does not appear to be able to afford to pay half the cost of the NLS (National Launch System), and DOD cannot afford to pay more than half.[41]
- At the same time, study after study within the administration concludes that current U.S. space launch systems and practices are archaic and noncompetitive, which could have adverse economic and military consequences in the future.[42]
- NASA, together with the Defense Department and the aerospace industry, spent nearly a decade defining and advocating a new launch vehicle program (which culminated in the proposed National Launch System), without being able to reach consensus with the Congress that it should be developed.[43]

Attempted Solutions

Vice President Quayle attempted to solve these problems with several suggestions in 1992. He advocated a review of space policy considering space has become a critical element in America's war-fighting capability, the end of the Cold War, the decline in defense spending and aerospace industry cutbacks, the impact of the federal budget deficits, and the revolution in space-related technologies.[44] The Vice President understood that the solution to the problem rested in a clear vision and firm leadership. The review he sought provided some useful guidelines:

The policy review resulted in three studies ending with the "Fink" report on the future of the U.S. space industrial base, the "Aldridge" report on the future of the U.S. space launch capability, and the "Wilkening" report on a post-Cold War assessment of U.S. space policy. The Wilkening report stated that the four U.S. space sectors—military, intelligence, civil, and commercial—each have their own institutional culture that encourages overlap and discourages cooperation. Two major conclusions from these studies dealt with the need for (1) fundamental changes in the way government space activities are organized and managed and (2) a new, cost-effective space launch capability.[45]

This became the cornerstone for reform and the foundation for the recommendations to the new administration.

The recommendations call for the Clinton administration to maintain a strong focus, make organizational changes that reduce duplication, and encourage greater cooperation so that the next generation satellites are launched on a more cost-effective system early in the next century.[46] This became the foundation for the Office of Science and Technology Policy, which directed:

> DOD and NASA to cooperate, in pursuit of their individual responsibilities, to take advantage of the unique skills of each agency. DOD was to be the "lead agency for improvement and evolution of the current U.S. expendable launch fleet." NASA was to be the "lead agency for advanced technology development and demonstration to prove the technologies required for next generation reusable launch systems.[47]

This directive attempted to clearly establish responsibility lines between the two organizations.

After the separation of duties, NASA expressed willingness to cooperate with industry to regain American dominance in launch. However, NASA was skeptical about industry's willingness to take the financial risks involved.[48] NASA Administrator Daniel S. Goldin said, "I think you guys [industry] lack the courage to step up to the plate and make it happen, . . . I don't care whose feelings get hurt,

I don't care which companies go under. We are going to deliver a vehicle at $1,000 a pound of payload to orbit, compared with $10,000/lb today."[49] Having set the goal and provided a vision, NASA was attempting to correct the deficit in planning for the future.

NASA's attempt did not receive the proper support from within the Clinton administration. Space transportation policy still fails to establish effective management oversight with the authority to prioritize the multiple agendas and budgets within the executive branch performing space related acquisition functions. Past experience indicates that such a "mechanism is essential so that the executive branch and the various congressional committees responsible for space launch can better cooperate in making cost-effective decisions on the future of national space transportation."[50] To some extent it appeared that the momentum gained in the closing days of the Bush administration was lost with the new administration.

Administration Approach

President Clinton believes that American leadership in science and technology has been at the center of our rise to world power status. He has advocated additional investment in science and technology to "drive economic growth, generate new knowledge, create new jobs, build new industries, ensure sustained national security, and improve our quality of life."[51] Clinton raised the budget for investing in commercial science and technology for the fourth consecutive year in 1996.[52]

Two forces drive development: the economy and the government. The economy, by definition will follow market forces. This means that government must provide leadership in areas that are vital to the nation's survival. The Government must exercise leadership in investment in science and technology in areas where individual companies can not assume the risk of investment even though the public benefit is great and the private return is doubtful."[53] Clinton's 1997 budget call projected over $1 billion more than 1996 in R&D investment.[54] This means that while there

is a transfer of dual use technology, the Government must continuing to exercise leadership as various agencies compete for a smaller piece of the pie. Space launch is critical to our country's health, economy and national security and should be improved by government R&D investing in the United States

Four years later Clinton administration methods have not produced results. Space and access to it, a national asset, still does not have a clear vision that would address military, intelligence, civil, and commercial space launch requirements to achieve greater standardization across these sectors; a process for centralizing oversight and decisionmaking to ensure interagency coordination and cooperation and elimination of duplication; and a funding mechanism to maintain program stability and meet the government's affordability challenge.[55] The first Clinton term did not effectively address the problem.

Dueling Agendas

The problem remains that different agencies have different agendas. This requires someone to lead while having the authority to make it stick. The Air Force wants to ensure it can obtain economical quantities of the next generation fighter, bomber, airlifter, and tanker to perform its core competencies. NASA wants to ensure it can continue the manned exploration of space and has the responsibility for building the next manned Reusable Launch Vehicle (RLV) to replace the shuttle. NASA also wants to maintain enough budget so that neither the shuttle nor the RLV will be the only scientific endeavor it can afford. This is where leadership becomes critical.

The Department of Commerce also has an agenda. They seek to drive American industry to compete in the launch arena without regard to national security or commercial issues. Commerce believes that "the U.S. Government is trying to press industry into financing the development of new commercial space transportation systems based on the notion that 'if you build it, they [the customers] will come.'"[56] Today, the United States is the only government that does not directly subsidize its national launch

system; Europe, Russia, Japan, India, Israel, and China all do. So it is significant that U.S. industry is worried about taking the high financial risk associated with developing the next generation launch system without government guarantees. The cost of long-term leadership in space transportation will require the Government to guarantee industry's return on investment, fund the advancement of space transportation technology, and pursue the extension of commercial aviation regulations, infrastructure, and support systems to serve commercial space transportation.[57] When it comes down to it, commercial users don't want to pay for the on-demand access to space the military needs to ensure access to space. Growing commercial demand is and will continue to outstrip military demand.

Department of Transportation (DOT) has a space agenda. DOT would like all U.S. weather satellites consolidated under its umbrella. DOT would also like institutional ownership of the present NAVISTAR Global Positioning System (GPS), to ensure the safety and reliability of the transportation industry including a universal navigation aid for commercial air transportation.

> Governments around the world have recognized the power associated with transportation and, hence, have sponsored its development and advancement. In many places throughout the world, transportation infrastructure is government owned and operated. In the U.S., transportation is primarily privatized, but with significant federal aid for developing and maintaining railroads, highways, waterways, aviation, and other transportation infrastructure. . . . The government has also funded weather forecasting and navigation means on which the transportation industry has become dependent for safety and reliability. A recent example is the development and deployment of the NAVISTAR Global Positioning System (GPS) satellite constellation.[58]

DOT interests may collide with military security and classification needs. As the line between military and commercial use of space

continues to grow dim, nonmilitary users will have a growing influence in the military use of space.

Customized launch sites in close proximity to other Atlas, Delta, and Titan sites can cause friction among competing contractors. Safety considerations slow down or hinder operations at adjacent launch sites. Numerous sites exist, limited to a couple for each specific launch-vehicle class. For example, at Cape Canaveral Air Station, Atlas, Delta, and Titan use separate and unique launch infrastructures, while the adjacent Kennedy Space Center has multiple airstrips for the shuttle, NASA, and military aircraft. All these sites need to be rationalized for maximum use and minimum redundancy.[59] DOT has an interest and should probably have an obligation to maintain part of the U.S. space launch infrastructure. However, the lines among user, supporter, and supplier are not clear. In a commercial market, other government agencies should play a role in launch sites, but a single agency should be the coordinator.

Observations

Considering previous attempts, the administration's current policy on national space transportation strategy still does not grant the authority at a high enough executive level to settle priorities among competing departments.[60] Focused authoritative executive leadership is a requirement for a national vision and essential to address the launch requirements for "national security, civil, and commercial space sectors; ensure interagency coordination, cooperation, and elimination of duplication; and maintain program and funding stability while meeting the government's affordability challenge".[61] DOD has not helped solve this problem because "space acquisition management responsibilities are fragmented among several organizations. . . . Decisions on space acquisitions may be better served by more central organizational management . . . and by separate space appropriations that would include both the military and intelligence sectors.[62] Without some form of consolidation this fragmentation will be fatal to U.S. efforts to be the leading space power.

To solve this problem the President should designate DOD as the unequivocal space launch priority among equals to ensure national security is enhanced. DOD should take advantage of the excellent military stewardship of space and continue to charge the military with developing a coherent space vision and the leverage to coordinate interagency and interdepartmental disputes. DOT should take on the responsibilities and modernization of the space launch range functions and sell services to DOD, commercial launches, and NASA as needed.

One often-touted solution is to create a separate space service, but this is not needed here. The requirement is for codified guidance that ensures a long-term space vision, stewardship, and priority absent of administration changes and bureaucratic infighting. Defense needs rapid, efficient, and cost- effective space launch capabilities for warning, surveillance, communication, weather, and navigation missions from space. The intelligence community needs rapid access to space for its present large and expensive payloads; heavy lift is a top intelligence concern today. However, future technology trends, miniaturization, and lighter payloads offer some hope of mitigating the problem. Even so, efficient and cost-effective access to space will remain a priority. Space is vital to the needs of intelligence. It ensures that information for *JV 2010*, information dominance, military operations, and the national security decisionmaking process is available when needed.[63] NASA needs reduced shuttle expenses for cost-effective, reusable, manned space flight. Commercial launch requirements dominated by geosynchronous communications satellites require heavy lift for medium-heavy satellites. Low-launch service price and dependable launch schedules are key to U.S. commercial competitiveness.[64]

FISCAL REALITY

Space launch requires a national commitment in terms of budget. The annual DOD space budget is in excess of $13 billion, almost 6 percent of DOD total military budget. "In addition to intelligence, over 75 percent of DOD's military space dollars are planned for

communications, surveillance, launch vehicles, launch facilities, and satellite control. The remaining amounts are planned for navigation, meteorology, supporting research and development, and general support."[65] NASA is spending an additional $13 billion.[66] General Moorman's April 1994 report stated, "DOD is faced with a predicament: a sizable investment is required in the near term to reduce costs in the long term, but the needed near-term investment may not be possible."[67] Thus agencies responsible for a portion of the mission should be given the budget to carry it out.

One advantage of a single American lead agency can be found in finding the best way to exploit Russian launch capability to make up for the deficit in our own ability. Most government agencies agree that:

> Russian launch vehicles and processes represent an untapped resource that could be beneficial to the United States. For example, the Moorman report stated that Russia possesses highly effective space launch systems and technologies that may provide attractive alternatives to domestic systems or technologies. The Russians have developed new launch vehicles; the Proton and Zenit medium-lift vehicles and the Energia heavy-lift vehicle are the latest. Russian engine technology is of particular interest to the United States because of efficiency, reliability, and an ability to vary the thrust. The Moorman report found that a detailed understanding of such technology could potentially lead to reduced cost for modernization. Although this technology sounds promising, it should be noted that the U.S. industrial technology base could be negatively affected by introducing Russian systems.[68]

Interagency cooperation with firm DOD leadership could exploit this situation but continued fragmentation will prevent significant advances.

In a significant shift from a policy that demanded independence of the U.S. space program from foreign sources, the Clinton administration's national space transportation policy prohibits the government from purchasing space launch services from foreign

sources, but it does not inhibit the use of foreign components or technologies in upgrading or developing launch systems. This allows the government to take advantage of foreign technology within the constraints of national security, foreign policy, public safety, or law.[69] This shift will allow the United States to compete better in the international arena. The U.S. effort must also address the issue of cost and timely launch.

> Some estimates place U.S. launch costs at twice that of the Europeans and four times that of the heavily subsidized Russians and Chinese. This erodes a dwindling military budget and drives U.S. commercial firms on to foreign lifters. In terms of response, it takes months on the pad to launch some satellites. Worse yet, the vast majority of our space launches do not meet their scheduled takeoff times, some are over a year late. Our ability to deliver a first class and competitive product internationally must be improved to retain an efficient space launch capability to meet military and commercial needs.[70]

U.S. launch noncompetitiveness has forced the administration to impede market forces and dictate to industry how much and when they can use foreign launch vehicles. Under an agreement reached January 30, 1995, "China may conduct up to 11 launches of geosynchronous satellites for international customers through December 31, 2001. The old agreement, which expired last year, was for nine launches over the previous six years."[71] The United States routinely threatens sanctions if nonmarket economies are caught selling launch services for less than the Nation deems appropriate, thus protecting but not subsidizing U.S. launch providers.[72] "According to officials in the White House Office of the U.S. Trade Representative, the United States would review any Long March bid that is 15 percent below its lowest Western competitor."[73] Somehow American trade representatives believe it is okay to force the competition to charge more and make more profit at the same time U.S. launch providers are idle. U.S. Trade Representative Mickey Kantor stated, "I believe this agreement carefully balances the interests of the U.S. space launch, satellite,

and telecommunications industries, . . . It will provide effective safeguards against disruption of the market for commercial space launch services while allowing for disciplined Chinese participation in the market."[74] The success of the U.S. space effort rests with our ability to mine foreign sources for useful technology.

While U.S. launch vehicle providers have lost market share, U.S. satellite-building performance continues to increase.

> Over the last decade, satellites' economic performance (as measured by lifetime, power, band width and throughput) has improved by a factor of 25 because of space technology improvements and data compression techniques. . . . Meanwhile, launcher efficiency has remained static. . . . The result is launches and insurance now often cost more than the satellites. . . . Ariane and Atlas vehicles are booked well into 1997, and disruptions in their schedules due to failures have ricocheted throughout the space and telecommunications industries.[75]

The satellite market is exploding while the launch provider industry continues to stack up the demand for affordable and reliable access to space. For example, the communication spacecraft market for the Asia-Pacific region through 2005 will climb to $7 to $10 billion, or twice the U.S.-European market. This will take place at the same time that predictions for booster availability will be declining.[76] Russia's SL-4 Soyus has failed twice consecutively but is still booking "$1 billion worth of Western satellite launches on the Khrunichev Proton," as U.S. policy limits the Russians to 8 satellites to GTO.[77] Russia's spacelifters, which use a common stage, "flew 16 successful flights in 1995, 18 in 1994 and 25 in 1993. . . . An even stronger pace with few failures has been maintained for 25 years."[78] Since shortly after the Berlin wall came down signifying the end of the cold war, Russia has been very cooperative in sharing its space technology: "The Russian government now appears to have the attitude that it will approve a good business deal, and let the purchasing country select what it wants."[79] If only the United States had cooperated sooner, it might well be on its way to a new launch system and Russia might be in better economic shape. U.S.

Government trade policy forces nonmarket economies that are willing to launch satellites for $40 million per launch to charge $70 million. At least the difference should be split with the supplier so that both the United States and French Ariane can invest the difference in future, more competitive launch vehicles and infrastructures.

Today, and for the foreseeable future, significant budget reductions resulting primarily from domestic "budget imperatives, as the nation tries to bring the deficit under control, and . . . a reduced strategic and conventional threat from traditional adversaries"[80] will make it more difficult to implement space imperatives while holding the line on current service funding. The "vision that space is the ultimate high ground certainly underscores that it will undoubtedly play a more prominent role in the future . . . [of] our national security strategy."[81]

CONCLUSION AND RECOMMENDATIONS

While past and evolving national policy has included specific direction on modernizing the Nation's space launch capability, little progress has been made due in large part to widely differing views and interests in this area and the inability to maintain consensus within the Executive Branch. . . . While the civil and defense space programs are clearly separate and distinct, space launch is an area of common interest and interdependence that needs interagency [priority and direction] coordination.[82]

Lack of vision, authoritative priority, focus, and national commitment has left the United States in a predicament—not enough funding in this austere budget environment to solve problems. New policy is not enough; real authority to back that policy is required. Inadequate authority and organizational fragmentation waste resources. All military space launch system acquisitions should be combined under a separate appropriation and a funding mechanism established to maintain future program stability. Assured, reliable, and affordable access to space will require continued active military

leadership, national focus and commitment, and funding to ensure that United States national security is enhanced in the 21st century.

> As we look to the challenges of the 1990s and beyond, the essential ingredients that lead to an expanded role for space are coming together. The Air Force has clearly stated an aggressive space policy to guide its actions; technology has matured to the point that the tactical benefits of space systems can be readily available to our combat forces; and we have in place the organizational structure—a rapidly maturing operational command for space (Air Force Space Command)—to provide the stimulus and advocacy for new space applications.[83]

The United States must develop a coherent long-term space launch policy that ensures affordable, reliable and assured access to space. It must build a mix of manned and unmanned space launch vehicles to guarantee U.S. present and future roles in space. The goal must be to support U.S. military and commercial requirements and ensure that the United States remains the world's leading space power. To achieve these goals, the following measures should be pursued:

- The lead agency concept should be maintained to focus limited resources.
- The United States should seriously consider building a heavy lift vehicle rather than a status-quo medium lift one. The projected annual commercial demand in the heavy category is triple that of military payloads. Even if technology reduces satellite size and weight, the United States should develop proficient capabilities to launch multiple medium-weight satellites on one heavy booster to enhance surge capacity and timely space access. Commercial market launch volume should enable government payloads to take advantage of the savings.
- Russian launch technology should be exploited to the fullest to make up for the deficit in our own abilities. Launches should be contracted for at the lowest possible rate and savings reinvested in future U.S. launch systems.

DAVID M. RIESTER

- Employment of a Russian work force should be considered in the initial building of the next generation of U.S. launch vehicles to save money on labor and keep scientists fed and employed. This will also reduce the number of Russian scientists employed by Third World countries building weapons of mass destruction.

- All military space-launch system acquisitions should be combined under a separate appropriation and a funding mechanism established to maintain future program stability.

- To protect and focus selected joint budget issues in an austere environment, DOD should create a separate budget authority for spacelift, much like the funding for Special Operations Command. These special joint budgets should be reserved for functions or systems that clearly cut across the traditional Army, Air Force, and Navy roles and missions and are of critical benefit to DOD's joint warfighting future. Under this approach any service could nominate systems or priorities that DOD would fund off the top of the budget before individual services get their cut.

Taken together, these recommended actions will ensure the United States a dominant position in space well into the next century.

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8

NATIONAL INFORMATION SYSTEMS

THE ACHILLES' HEEL OF NATIONAL SECURITY

MITCHELL S. ROSS

We are at risk. Increasingly, America depends on computers. . . . The modern thief can steal more with a computer than with a gun. Tomorrow's terrorist may be able to do more damage with a keyboard than with a bomb.[1]

THE CIVILIAN INFORMATION INFRASTRUCTURE IS THE MOST vulnerable point in our national security. The United States is an information-dominated society, and a successful information warfare[2] attack would be devastating to the Nation. Critical national information infrastructures are vulnerable to myriad threats, ranging from rogue technicians for hire to coordinated transnational efforts to gain economic, diplomatic, or military advantage.

Defense leaders have developed doctrine that rests on information technology and secured information systems with no attention to information infrastructure protection, particularly the vulnerable civilian information infrastructure on which the military is dependent. The nation's vulnerability increases proportionally to our dominance of the information revolution.

INFORMATION PROLIFERATION

National security is totally dependent on information infrastructures and the dependence grows as the 21st century approaches. During the past several decades, the United States was the architect of the information technology revolution. Widespread application of this technology created a vast and critical national information infrastructure. This expanding information infrastructure is a strategic asset for the new realm of digital commerce and for the new global economic system. Citizens, businesses, and government institutions are increasingly dependent on this interdependent network of computer-based information systems. The Nation's physical and economic security depend on this information infrastructure.[3]

The security of this information-dependent economic system is directly related to achieving our national interests. The National Security Strategy published by the White House states: "Our economic strength gives us a position of advantage on almost every global issue . . . economic and security interests are increasingly inseparable."[4] National security rests upon economic security, which rests on the national information infrastructure.

The reliance of national security upon information infrastructures is the yoke of Third Wave[5] nations. We have opened a Pandora's box that contains an infrastructure that is both a great blessing and a great vulnerability. U.S. society will never be able to close it.

Information Systems Growth

The vulnerability increases as the information infrastructure grows. Of the 110 million computers in the world, more than half are at

work in the United States.[6] Over 60 percent of the labor force is employed by information-related activities in the United States.[7] As of 1967, a desktop computer provided the average citizen the power to perform calculations in 1 week that all the mathematicians who ever lived could not do.[8] Four years ago the Internet boasted one million users. Today the number has exploded to 58 million, with an estimated growth rate of 183 percent per year. The Internet now links over 9.5 million computers in 135 countries—and it started as a U.S. military network of 4 computers in 1969.[9] The worth of most wealth-generating resources relies on "knowledge capital" and not on financial assets or labor.

The systems supporting the Nation's information infrastructure are increasingly interconnected and thus interdependent. Regional electrical power networks now exchange information more substantially than every before. More than 1,500 tele-communications companies that provide public telephone service share a common system of networks. Banking, financial trading, and exchange systems are interlinked globally in real time networks. By virtue of this interdependence, separate systems become an indiscriminate part of the total virtual information system. A vulnerability in one section of an information network can be exploited to disturb or deny service in a distant network at a disparate time.[10]

Presidential Vision
The growth of information technology described above is acknowledged by the national leadership. President Clinton's Information Infrastructure Task Force has outlined a knowledge-based global system that includes electronic commerce, health care resources, research communities, education systems, and a virtual electronic government. Dubbed the National Information Infrastructure (NII),[11] it is growing beyond expectations. Thousands of existing information systems and components sustain the NII, including telephone switches, pipeline control systems, the air traffic control systems, Internet, financial networks, etc. The billions of bits of data passing through the NII represent sensitive information

about individual citizens' personal lives, social security, credit details, financial assets, tax history, and health records—information that represents citizen's identities, wealth, and security. The NII is a labyrinth of information networks never imagined before the recent explosion of the Internet.

The Third Wave Paradigm

The well-being of this information infrastructure system defines the welfare of individual citizens, governments, and economies. Therefore, the importance of information is changing. Information is the major commodity of tomorrow and the currency of the future.[12] Information has advanced to a position of primacy beyond other national resources.

The primacy of information fueled the Third Wave and permanently changed our society. Information systems are the major stimulant and definer of the Third Wave era. A specialist in new technology for *Newsweek* describes the information revolution as overwhelming for the United States, "outstripping our capacity to cope, antiquating our laws, transforming our mores, reshuffling our economy, reordering our priorities, redefining our workplaces, putting our Constitution to the fire, shifting our concept of reality."[13] Just as the telephone and television began a communications revolution that shrunk the globe and remodeled our lifestyles, the microprocessor is providing the ability to originate and promulgate information more efficiently, with greater speed and by orders of magnitude that were unimagined a generation ago.

The changing importance of information causes changes in economic policy. The cost and taxation of cyberspace[14] will change the way we think of the "free" flow of information across networks. For example, Citibank and Deutsche Post are locked in a legal dispute regarding the cost of e-mail transmitted across German borders.[15]

The information technology explosion impacts the nature of the nation-state. Cyberspace is global and defies regulation. It undermines national sovereignty, and nations dispute the control of information as never before. Countries can attempt to limit access

to transborder information flow, but their controls generally prove inadequate. The problem goes away only if a country unplugs itself from the global information infrastructure—a suicidal choice.[16] National survival favors greater investment in the ethereal, not the antithesis.

THE DEFENSE INFRASTRUCTURE IS THE CIVILIAN INFRASTRUCTURE

The defense establishment has over 2.1 million computers, over 10,000 local and wide area networks (LANs), and over 100 long-distance networks.[17] Computers are expected to manage, record, and coordinate elements of every operation from deploying entire armies to ordering beans and bullets.

The civilian information infrastructure is critical to national defense because military communications, transportation, finances, and logistics rely on the civilian networks. Over 90 percent of daily DOD communications travel over civilian-owned and -operated communications systems.[18] The same communication networks that service public chattering also support the nation's military networks. Every information communique from launching missiles to emergency mobilization to paying soldiers, spans civilian information infrastructures.[19]

The doctrine of U.S. defense is grounded in information superiority.[20] However, the doctrine makes a dangerous assumption that the civilian information infrastructure is available to the military in a crisis. The doctrine responsible for operational planning states:

> The joint campaign should fully exploit the information differential, that is, the superior access to and ability to effectively employ information on the strategic, operational and tactical situation which advanced U.S. technologies provide our forces.[21]

This doctrine goes too far, presupposing that information superiority is guaranteed. Defense leaders have developed detailed information technology and secured information systems with no

attention to information infrastructure protection. Experts suggest that information is now the central source of destructivity, just as it is the central source of productivity. The prediction is that soldiers on the battlefield operating computers will outnumber soldiers carrying guns.[22] The U.S. military will falter and die without the constant flow of information.[23]

The Defense Establishment
The military must solicit the cooperation of civilian-owned and -operated information systems to avoid an electronic Pearl Harbor. Unfortunately, the defense establishment has no say in the management of the civilian information systems; it is deeply concerned but not responsible. Legally, DOD cannot force the protection of systems belonging to the civilian community, and the increasingly austere defense budget will not fund the fix. Yet, little occurs in the civilian information infrastructure that does not impact national security.[24]

The Defense Science Board recognized the impact of vulnerable civilian information infrastructures upon national security:

> Infrastructures are vulnerable to attack. While this in itself poses a national security threat, the linkage between information systems and traditional critical infrastructures has increased the scope and potential of the information warfare threat. For economic reasons, increasing deregulation and competition create an increased reliance on information systems to operate, maintain, and monitor critical infrastructures. This in turn creates a tunnel of vulnerability previously unrealized in the history of conflict.[25]

Unfortunately, this "tunnel of vulnerability" is not the responsibility of the defense establishment. The civilian sector must take the initiative because DOD is not in control.

National Leadership
Several government agencies are beginning to recognize the threat to information infrastructures. Among these are the executive

branch, Congress, the Department of Justice, and the intelligence community. On July 15, 1996, President Clinton signed Executive Order 13010, *Critical Infrastructure Protection,* specifying cyberthreats to the Nation and pointing out, "Certain national infrastructures are so vital that their incapacity or destruction would have a bewildering impact on the defense or economic security of the United States."[26] The White House characterizes the situation as a national emergency, thus the Executive Order established a Presidential Commission on Critical Infrastructure Protection. The White House interest in civil cyberdefense has been compared with the urgency of the civil defense mania of World War II.[27]

The Security Policy Board (SPB) was established by Presidential Decision Directive 29 (PDD 29) to reassess security policy in the context of evolving and proliferating technology. The concern outlined in PDD 29 revolved around the changing technological world and security policies that did not match threats emerging after the Cold War.[28] One of the first priorities addressed by the SPB was information system vulnerabilities. In its first published report, the SPB indicated that the nation was at risk and that commercial losses to information system attacks were grossly under reported. Furthermore, the growth of information systems is expected to stimulate vulnerability to information loss and corruption. The dependence of national security on information systems makes this a vital national interest. The SRB characterizes the government, defense, intelligence, and executive branches as poorly organized to combat the threat.[29]

Congress has also shown interest in the threat to the information infrastructure. The Kyl Amendment to the Intelligence Authorization Bill for fiscal year 1997 required that:

> The President shall submit to Congress a report setting forth the results of a review of the national policy on protecting the national information infrastructure from strategic attacks.[30]

Part of the amendment required the intelligence community to provide a threat assessment to Congress. However, the intelligence

community was unable to provide a current assessment because of the absence of accurate data concerning the dimension of the threat or the extent of damage. The report is still in the preparation stage.[31]

The Department of Justice took the initiative in addressing cyberattacks on the information infrastructures under the auspices of PDD 39, which addresses counterterrorism. The Attorney General chairs a cabinet committee reviewing the vulnerability of critical national infrastructure to terrorism and provides a threat assessment to the President.[32]

The Deputy Attorney General takes a particularly hard stand on cyberthreats. Speaking at the Air Force Academy at the Conference on National Security in the Information Age, she said: "There is a high potential of crippling strikes aimed at vital U.S. computer or energy systems by terrorists." The United States should "harden vital infrastructure against computer and physical attacks. . . . Our national well-being rests on an increasingly interconnected infrastructure."[33]

Russia also recognizes the gravity of information attacks on information systems and the impact of such attacks on national security. First Deputy General Director of the Federal Government Communications and Information Agency Vladimir Markonenko noted, "The danger of information war breaking out is coming to the fore, and by its consequences information warfare will soon rank second only to thermo-nuclear war."[34] In the Russian view, it is now legitimate to propose the creation of a new arm of the military to deal directly with the information warfare threat.[35] The Russian shift to information warfare has been so temperate that it is often not recognized. They recognize information warfare is more economical for the attacker and is environmentally safe. The Russians believe, "Information and information technologies are becoming a real weapon. A weapon not just in a metaphoric sense but in a direct sense as well."[36]

Cyberattacks and the Commercial Sector

Outside the government, the threat of cyberattacks is just as real. Protection of civilian information systems against information warfare is very profitable for the commercial security industry. According to the head of the IBM Emergency Response Service based in Sterling Forest, New York, "There's more business than any of us can go after."[37] The attacks are proliferating so rapidly that the Science Applications International Corporation's (SAIC) security-related revenues doubled in 1996 and are expected to double again in 1997.

Firms marketing security services provide response teams to combat computer invasions 24 hours a day. The emergency response market in computer security is expected to take in $17 billion by the year 2000, only a snippet of the overall computer security business. Surveys show up to 58 percent of companies' computers were broken into in a 12-month period. One-third of the attacks cost the victim company at least $1 million per attack. Companies prefer to enlist guardians such as IBM or SAIC rather than law enforcement to avoid the publicity of a vulnerable business system. Companies fear damaging customer confidence or legal suits against the company. Nondisclosure agreements between companies and security guardians are essential to the self-conscious companies.[38]

Carnegie Mellon University's Computer Emergency Response Team (CERT) is the information "911" service funded by the Defense Advanced Projects Agency (DARPA). Last year CERT answered over 31,000 messages requesting help to curb computer attacks.[39]

Petty computer crimes by lone hackers are not the threat, but if a neophyte hacker can break into one system, the remaining systems are vulnerable to the same methods at a strategic level. A sophisticated attack coordinated by consummate cyberprofessionals is a valid danger.

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THREATS, ADVANTAGES, AND MODUS OPERANDI OF CYBERATTACKERS

A major threat to the United States is likely to develop from an unconventional, unexpected nation emerging from cyberspace. This "cybernation" will comprise computer-literate warriors with access to high-technology weapons designed to penetrate information infrastructures. The cybernation will be the fastest rising nation in the world, growing so rapidly that population estimates will be difficult to predict. One forecast shows it will be larger than China in a few years. Imagine a new state that has more religions, races, and languages than any other nation on earth, yet it has no government and no borders. It will be a global village connecting hundreds of millions of citizens via local networks, on-line services, the Internet, and e-mail. Their cognizance of cyberspace creates a tremendous sense of community that establishes their citizenship, or "netizenship,"[40] in the cybernation.

The new community of cyberwarriors will understand that destruction of a nation does not require the physical destruction of conventional warfare. An analyst at the Foreign Military Studies Office characterized the vulnerability:

> Societal attributes may be contaminated or destroyed without the widespread physical destruction that accompanies the use of nuclear or conventional weapons. In the hands of irrational decision makers or rogue actors, information technologies and capabilities could prove to be as destructive to state sovereignty and the well-being of the citizens of any state as the kind of armed assault feared during the Cold War.[41]

A nation whose economic and national security rests on the primacy of information is particularly vulnerable. The citizen is jeopardized at least to the extent feared during the Cold War.[42]

Power projected from cyberspace offers an alternative form of influence rather than bombs and bullets. As recognized by a Deputy Secretary of Defense who oversees information warfare, "We have to redefine national security for the information age."[43]

The United States has no peer competitor in conventional warfare, but a cyberattacker nevertheless has advantages.

Advantages of Attacking from Cyberspace
Five advantages of the new threat over other forms of attack on our national security are clear.

- Availability. The weapons of choice for cyberattacks are commonly available advanced information technology. The weapons technology is available from commercial off-the-shelf vendors. Third Wave nations are more willing to share technology than ever before, partly in the interest of nation building and partly to energize the global information infrastructure . In addition, the end of the Cold War terminated much of the paranoia associated with providing technology to competitors. Today, tanks and fighter aircraft are much more difficult to acquire than cyberspace weaponry.
- Speed. Electronics operate at light-speed, and the only restriction is the typing speed of the attacker. Information attacks occur at a speed with which crisis managers are not accustomed, and the usual reaction mechanisms used to manage a crisis response are obsolete. Now, offensives occur almost instantaneously, making them difficult to track and identify.
- Anonymity. Information systems, by their nature, hide operatives in anonymous electronic mazes. The stealth properties of cyberattack are created by the capacity of a cyberwarrior to maneuver through cyberspace without physical trace or constraint. Additionally, the inability to detect when a system is attacked makes the cyberattacker unknown to the victim. Stealing passwords and posing as another user is relatively easy.[44] It is almost impossible for a computer to know for certain where incoming data really originate.[45] Several Internet sites specialize in obscuring e-mail addresses and user identities,[46] thus the attacker can virtually hide in the open, in cyberspace.

The element of anonymity is demonstrated in the Defense Information Systems Agency (DISA) "Red Cell" operations—deliberate attempts to penetrate information systems to expose vulnerabilities. Their success rate tells the story. Red Cell operations penetrated 88 percent of targeted information systems, and 96 percent of all penetrations were undetected. In the 4 percent where penetration was detected, no action resulted 95 percent of the time. DISA estimates one in 1,000 successful penetrations are ever reported.[47]

• Legal vulnerability. The legal system is designed for a physical world and cannot support a defense in cyberspace. The legal community is accustom to physical, not virtual jurisdiction. Law is *prima facie* territorial,[48] and because electronic information is fixed in neither time nor in space, the law must adjust.[49] Because information recognizes no boundaries or no sovereignties and is absent of adequate jurisdiction in international law, prosecution of the perpetrators of cyberspace is complex. U.S. Attorney General Janet Reno admits that the laws dealing with stolen property transported over state boundaries do not cover intangible property such as computer data and that some countries have "weak laws, or no laws against computer crimes."[50] In some European countries (the Netherlands, for example), computer intrusion in not a crime.[51]

• Nonlinear gains. Finally, an attacker has the advantage of achieving nonlinear gains for only Spartan efforts. The nonlinearity is created by the minor cost of the information under attack in relation to the greater value of the actual target. The software, databases, or inventories destroyed cost much less then the currency, physical items, or identities that are destroyed or disrupted.

An example of the nonlinear nature of information warfare is found in the case of Dutch cybernauts offering Saddam Hussein a business proposition during the Gulf War. The logistics of moving mountains of material to the Gulf region made extensive use of automated systems. The Dutch hackers offered to disrupt the deployment of the U.S. military for $1

million by corrupting the information systems used by U.S. logisticians. The potential for disruption was great because of the dependence on information systems to manage massive logistics. Fortunately, Saddam rejected, or could not comprehend, the offer.[52] Saddam could have profited a tremendous nonlinear gain for the disruption of a little software. In fact, in April and May of 1991, computer experts from the Netherlands penetrated 34 DOD computer systems.[53]

The advantages of available technology, attack speed, anonymity, legal ambiguity, and nonlinear gains make cyberattacks an attractive modus operandi for criminals, terrorists, and countries unable to compete with the U.S. in conventional conflict. Cyberattackers have advantages unavailable to nation states.

Two cases emphasize the advantages outlined above. First, consider the cyberattack from West Germany on U.S. information systems in 1986. The attackers entered the network through Lawrence Berkeley Laboratory (LBL) and attacked over 400 computers at universities, military bases, and defense contractors. Files and data dealing with defense issues were downloaded over a 10-month period and sold to the KGB. The FBI, CIA, DOD, and NSA did not initiate an investigation even though some of their systems were invaded. An employee of the LBL tracked down the attackers during a 1-year hunt in cyberspace. Most attacks went undetected. Clifford Stoll from LBL discovered the intruders only because of a 75-cent accounting discrepancy in the computer account. Eventually authorities in West Germany arrested five men in Hanover, West Germany, but did not charge them with a computer crime; the "Hanover Hackers" were charged with espionage.[54]

A second example is that of the fugitive computer attacker, Kevin Mitnick. Authorities were unable to locate Mitnick because he altered telephone information systems to mask his location when attacking computer systems. A researcher at the San Diego Super-computer Center, Tsutomu Shimomura, tracked down Mitnick for authorities. Mitnick, who stole millions of dollars in industrial

secrets, was the most wanted computer criminal in the world but authorities could not locate or apprehend him for 2 years.[55] In both examples, computer administrators did not know when they were attacked, the attackers operated with anonymity using available technology, and the potential nonlinear gain was great.

Computer Agents

Sakkas developed the notion that a computer can be "turned" like a double-agent to act against its master.[56] Unlike an agent, the computer risks no harm or embarrassment. The computer does not move through the physical world to perform the acts of an agent. It may search, collect, destroy, or disrupt information as programmed. The computer-agent moves only through cyberspace, leaving no finger prints or physical evidence behind.

Methods of computer penetration are growing more sophisticated. A computer specialist well versed in networks and software can penetrate virtually any information system from a stealth position because of inadequate protection of systems and poor computer security.[57] Sophisticated software tools used by attackers are extremely difficult to detect, trace, and identify, and such weapons are more destructive to Third Wave nations than modern armies.[58]

Tools and techniques of attack include this small sampling:

- Van Eck techniques or electronic eavesdropping: Computers are easily "read" by simple undetected receivers at up to distances of 1 kilometer.[59]
- Trojan Horse: A software program covertly buried in a trustworthy computer program that corrupts, steals, or manipulates data at the whim of the perpetrator.
- Viruses or polymorphic code: A program that replicates itself at a preset time and moves from one computer to another performing any act of sabotage or theft.
- Worms: Similar to a virus. A worm moves through the network attacking each system it contacts but does not

reproduce itself as a virus. It's just there, then it's somewhere else.

• Logic bombs: A dormant program activated by a specific event or time to corrupt or destroy systems.

• SATAN: A software tool available on the Internet to examine computers for vulnerabilities. It reports system weaknesses to plan an attack against specific vulnerabilities.[60]

• Trapdoors: A means of entry into an otherwise protected system that avoids the usual security and detection barriers.

• Sniffers: An eavesdropping program that monitors communications and transactions, stores them, or reports them directly to the perpetrator. Sniffers are great for collecting passwords.

• HERF guns: An electronic device that directs high-energy radio frequencies at targets such as computers. The effect is disruption or electronic destruction of the target.[61]

• EMP bombs: Devices, perhaps briefcase size, that emit extremely powerful electromagnetic pulses to burnout electronic systems.[62] No flash, no bang, just a silent bomb.

• Chipping: The manufacture of counterfeit chips containing intentional faults or programs to sabotage hardware.

• WatcherT: Similar to SATAN but based on artificial intelligence techniques resulting in a more extensive examination of vulnerabilities.

Each of these means of penetration or system analysis is covert, most are untraceable, and they are available for download from the Internet or easily assembled from public documents.

Potential Information Infrastructure Attackers
Potential cyberattackers with the aptitude to successfully penetrate information systems are well known. Sakkas names at least five confirmed sources of such attackers:[63]

- The Stasi, the former East German state security service, who were well versed in sophisticated computer penetration and intelligence gathering. Since the collapse of Eastern Europe, former Stasi officers are available to governments that lack technical means to exploit information systems.
- The Spetsnaz and Osnaz, former Soviet special forces technicians, who are known to work for-hire to accomplish computer sabotage or terrorism. They currently work outside the former Soviet Union and prefer not to return to the more economically depressed lifestyle in Russia.
- Mercenaries. The most likely mercenaries are foreign specialists concerned only with monetary gain and not with the legality of their technical services. These merchackers[64] may serve with international crime organizations with no loyalties other than financial gain.
- The thousands of unemployed technicians for hire with more loyalty to their profession than their nationality.
- And finally, Third World specialists from India, Singapore, Thailand, Taiwan, and the Philippines. Third World entrepreneurs are aggressively proliferating software development centers and seeking exposure to foreign technologies.

At least 21 active information warfare states present a viable risk to U.S. systems.[65] The Director of Central Intelligence told Congress:

> My greatest concern is that hackers, terrorist organizations or other nations might use information warfare techniques as part of a coordinated attack designed to seriously disrupt infrastructures such as electric power distribution, air traffic control or financial sectors, international commerce and deployed military forces in time of peace or war . . . we have evidence that a number of countries around the world are developing the doctrine, strategies, and tools to conduct information attacks. . . . International terrorist groups clearly have the capability to attack the information infrastructure of the United States.[66]

Foreign espionage attacks against information systems are well documented. Employers may be foreign governments, intelligence organizations, criminal organizations, or terrorist groups.[67]

THE CENTER OF CYBERGRAVITY

The most likely targets are government support systems, U.S. economic systems, utilities, transportation, and communications networks and personal databases. Ninety to ninety-five percent of the information required to carry out essential government operations is processed by privately owned and operated national information infrastructures.[68]

The Nation has no planned defense, no one is in charge of cybersecurity, and the vulnerability is poorly understood by key government authorities. No one accepts responsibility for the consequences of attacks on civilian information systems. The counterterrorist methods honed over the years by law enforcement specialists are ineffectual against a terrorist cyberattacker,[69] and we are not creating new methods to ward off such attacks.

"Are we under attack? By whom? What are our courses of action?" The response is most likely an impotent, ambiguous stuttering. We must conduct an honest assessment of the Nation's vulnerability and its ability to absorb a cyberattack. Complicating such an assessment is the need for "jointness" to include not only the four military services, but the civilian community as well.[70]

The National Cyberwallet

The nation relies on increasingly complex technology for financial systems. No one authority fully understands or controls the complex economic relationship between each financial function and related business systems. The effect is a potential battlefield without a front line. The U.S. homeland is no longer an economic sanctuary, and attackers enter easily from cyberspace.[71]

Citibank, the 26th largest bank in the world,[72] was the victim of a cyberspace attack by an international crime effort. The motive for the cyberattack was individual greed; if the attack had been politically or ideologically motivated, the damage could have been

far greater. Using the electronic transfer system, attackers were able to illegally transfer approximately $12 million to their own accounts via the international phone network. Although authorities apprehended a 28-year-old Russian biochemistry graduate in St. Petersburg, Russia, and other arrests were made in the Netherlands, Tel Aviv, San Francisco, New York, and Britain,[73] not all of the funds were recovered.

Most money today exists as bits and bytes. Only a small portion of the global wealth exists as a hard commodity or physical form. The GNP of the United States is $7 trillion, but only 3 percent of that exists as hard currency.[74] Increasingly, financial transactions are done electronically with no physical exchange of currency. Estimates place the global transfer of currency via computer as trillions of dollars every day. The Federal Reserve System handles more than 24,000 wire transfers per day; Citibank transfers about $500 billion daily via electronic information systems.[75] The vulnerability of this system is unfortunately accepted as commensurate to just another Third Wave business risk.[76]

Financial institutions are increasingly worried about the risks of electronic transfers. According to the U.S. Congress Office of Technology Assessment, the gravest issue in international banking is the increased vulnerability of telecommunications networks and electronic funds transfer.[77]

Individual Digital Persona
Much American societal health depends upon the social confidence in individual rights and guaranteed privacy. Volumes of personal information are readily available and subject to alteration—bank accounts, credit card numbers, social security records, tax returns, and credit reports. Identity, privacy, and persona are now digital. A Third Wave nation may be overcome by attacking the information that represents civil identity. Win Schwartau, an information warfare expert, recognizes the importance of digital identity:

> Your life can be turned absolutely upside down if the digital-you ceases to exist. Electronic murder in Cyberspace: You are just

gone. Try proving you're alive; *computers don't lie.* Or if the picture of the digital-you is electronically redrawn just the right way, a prince can become a pauper in microseconds. *In cyberspace, you are guilty until proven innocent* [emphasis added].[78]

Glenda Callaway of Upland, California, was robbed of her digital persona by a skilled information operative. Using information in her electronic credit report, the operative got a driver's license issued in her assumed name. The operative ran up $31,000 in credit card charges and opened a bank account in her name. Next, bad checks were written from the account. The operative became Glenda Callaway in cyberspace. Glenda Callaway's credit was ruined, and she lost control of her financial assets.[79] This is possible because computers don't lie. If the computer says your name is Callaway, you're Callaway no matter who you are. The same type of attack on a large scale at a strategic level has unimaginable consequences.

Cyberattacks with Strategic Implications
Cyberattacks may target a specific product or industry. Frequent foreign intelligence collection targets are primarily high-technology or defense industries, according to the FBI and Defense Investigative Service. The literature is full of accounts of military computer break-ins. Less publicized, but perhaps more critical, is the increasing threat to industrial systems, transportation networks, electrical distribution systems, telephone networks, financial systems, and computer-controlled systems of nuclear power plants.[80] The partial list below represents the most frequent targets of espionage efforts during the past year:

Aerospace, armaments and energetic materials, biotechnology, chemical and biological systems, computer software and hardware, defense armaments technology, directed kinetic energy, energy research, information systems, nuclear systems, sensors and lasers, space systems, weapons countermeasures.[81]

Each of these industries is strategically important to the United States because they develop sensitive products for the national security and are responsible for the leading-edge technologies required to maintain national economic primacy.

A PEARL HARBOR IN CYBERSPACE

The Government Accounting Office, in collaboration with the Defense Science Board Task Board, concluded:

> A large structured attack with strategic intent against the United States could be prepared and exercised under the guise of unstructured activities and . . . such an attack could cripple U.S. operational readiness and military effectiveness.[82]

An electronic Pearl Harbor is possible. An electronic Pearl Harbor via information warfare techniques need not engage conventional U.S. military forces. A cyberattack could proceed directly to the civilian information infrastructure. No forewarning or escalation of events need occur. Such an attack would hinder conventional military forces while attacking information systems that support communications, finance, electric power grids, transportation, or other strategic targets. Such a strategic invasion would arrive without military contact. For such an attack the more lucrative targets are the most undefended. According to a former General Counsel to the NSA, "The United States could be crippled by attacks aimed entirely at systems in private hands. And private companies can't be expected to protect against state-sponsored information warfare."[83]

The defense establishment must take responsibility to defend vulnerabilities associated with Third Wave statehood. The Secretary of Defense has the responsibility to protect the United States. The Defense Science Board affirmed that the Department of Defense must:

> "Provide for the common defense" of the Nation and to be "ready to fight . . . with effective representation abroad." By first focusing

on improving its ability to manage the information warfare challenge to the defense mission, the Department can meet its national defense responsibilities while also enhancing its ability to play a significant role in defending against and countering a strategic information warfare attack on national centers of gravity.[84]

CONCLUSION

The United States is enamored with the promise of information systems. The explosive growth of the NII is expected to produce economic gains and government efficiencies.   However, the immense vulnerability of the information infrastructure leaves our national center of gravity undefended. This vulnerability represents a lucrative target to attackers who cannot confront the United States with conventional weapons. These cyberattackers are real and well armed with information warfare tools. Examples of successful cyberattacks already exist.

The vulnerabilities of the NII are acknowledged by the executive branch, Congress, the CIA, and the Attorney General. They agree that the civil information infrastructures are critical to national security. For example, a former member of the CIA observed: "The civil sector, and its role in providing and storing unclassified content is now acknowledged to be mission critical. . . . The civil sector is our center of gravity."[85]

The vulnerability of the information infrastructure puts our Nation's vital interests at risk. Our military is lame without information superiority. Our national economy and security rest on absolute dominance of the information spectrum. The vulnerability of the U.S. information infrastructure is the Achilles' heel of national defense.

NOTES

1.   Department of Defense, *Report of the Defense Science Board Task Force on Information Warfare Defense* (Washington: November 25, 1996, appendix A), 1.

2.   *Information Warfare—Legal, Regulatory, Policy and Organizational Considerations for Assurance*, 2d ed. (Washington: Joint Staff, July 1996), B-73. For the purpose of this paper, *information warfare* is defined as actions

taken to achieve *information superiority* by affecting adversary information, information-based processes, information systems, and computer-based networks while defending one's own information, information-based processes, information systems, and computer-based networks. *Information superiority* is that degree of dominance in the information domain which permits the conduct of operations without effective opposition.

3. Congress, Senate, testimony by John M. Deutch, "Foreign Information Warfare Programs and Capabilities," Senate Committee of Governmental Affairs, Permanent Subcommittee on Investigations, 104th Cong., 2d sess., June 25, 1996. He clearly articulated the relationship between economic and security issues in the information age in this testimony. He also portrayed U.S. dependence on information systems as vulnerable because "any 'bad actor' can acquire the hardware and software needed to attack our critical information based infrastructures."

4. *National Security Strategy of Engagement and Enlargement* (Washington: U.S. Government Printing Office, February 1996), 45.

5. Alvin Toffler and Heidi Toffler, *War and Anti-War: Survival at the Dawn of the 21st Century* (New York: Little, Brown, 1993), 9-10. Third Wave is a term popularized by Toffler that refers to the information age of the nation-state. The first age was the agrarian age, the second was the industrial age, and the third is the information age.

6. Andrew Pollack, "The Computer Age: Still a Work in Progress," *The New York Times*, August 11, 1991, sec. 4, 1.

7. *Report of the Defense Science Board Task Force,* 19.

8. Steven Levy, "Technomania," *Newsweek*, February 27, 1995, 26. More recent estimates run as high as 125 million computers.

9. Congress, Senate, Committee of Governmental Affairs, Permanent Subcommittee on Investigations, *Hearings on Security in Cyberspace, (Minority Staff Statement)*, 104th Cong., 2d sess., June 5, 1996, 1-7.

10. Robert H. Anderson and Anthony C. Hearn, *The Day After in Cyberspace* (Santa Monica, CA: RAND, 1996), 6.

11. The National Information Infrastructure (NII) is the total U.S. electronic spectrum. The phrase "information infrastructure" has an expansive meaning. The NII includes more than just the physical facilities used to transmit, store, process, and display voice, data, and images. It encompasses a wide range and ever-expanding range of information systems to manage transportation, electrical distribution, health, finance, education, government, food distribution, space assets, telecommunications, water, energy resources, media, and much more.

12. Cathy Romano, "To Protect and Defend," *Management Review*, May 1, 1996, 25.

13. Levy, 26.

14. The prefix "cyber-" refers to the electronic dimension. For example, when two people converse over the telephone long distance or send e-mail their voice or message travels through cyberspace. It is an intangible place where information exists momentarily enroute between computers. It is the ethereal reality.

15. Mark Ward, "Taxing Cyberspace," *Cybernautics Digest* 3, no. 10, (Nov/Dec 1996): 14.

16. Jonathan D. Aaronson, "Free Trade and Information," *International Affairs* 72, no. 2 (April 1996): 318.

17. *Report of the Defense Science Board Task Force* , 24.

18. Kenneth A. Miniham, Intelligence and Information Systems Security: partners in Defensive information Warfare," *Defense Intelligence Journal* 5, no. 1 (Spring 1996): 20.

19. *The Economist*, "Cyber Wars," January 13, 1996, 77-78.

20. *Joint Vision 2010* (Washington: Joint Chiefs of Staff, 1996), 16

21. *Joint Warfare of the Armed Forces of the United States*, Joint Publication 1 (Washington: National Defense University Press, January 10, 1995), IV-9.

22. Toffler, 71.

23. Alan D. Campen, "Information, Truth, and War," in *The First Information War*, ed. Alan D. Campen (Fairfax, VA: AFCEA International Press, 1992), 89.

24. Neil Munro, "New Info-War Doctrine Poses, Risks, Gains," *Washington Technology*, December 22, 1994, 2. Colonel Doug Hotard, chief of the Pentagon's information warfare office, was quoted as saying, "There is not much that goes on in the civil sector that does not impact military readiness. . . . It is a very difficult problem."

25. *Report of the Defense Science Board Task Force,* ES-2.

26. President, Executive Order 13010, "Critical Information Infrastructures," *Weekly Compilation of Presidential Documents* 32, no. 29 (July 22, 1996), 1242.

27. Frank Sowa, "Clinton's Secret War Against Cyber-Terrorists," *Cyber World Monitor* 10, no. 109 (October 1996): 1.

28. Presidential Decision Directive 29, "Security Policy Coordination" (Washington: September 16, 1994.

29. White Paper on Information Infrastructure Assurance (Washington: Security Policy Board, December 1995), 2.

30. Congress, Senate, Committee of Governmental Affairs, Permanent Subcommittee on Investigations, *Hearings on Security in Cyberspace, (Minority Staff Statement)*, 104th Cong., 2d sess., June 5, 1996, 28.

31. Ibid., 27-31.

32. Janet Reno, "Critical Infrastructure Security," Memorandum to the President's Cabinet (Washington: March 14, 1996).

33. Jamie S. Gorelick, *National Security in the Information Age*, speech at the U.S. Air Force Academy, Colorado Springs, February 29, 1996.

34. Lyudmila Yermakova and Andrey Galkin, "Upper House Views Threats to National Security," ITAR TASS, July 25 1996, *FBIS-SOV-96-145*, July 26, 1996, 8.

35. Mary C. FitzGerald, "Russian Views On Information Warfare," *Army* 44, no. 5 (May 1994): 57.

36. Yevgeniy Korotchenko and Nikolay Plotnikov, "Information is Also a Weapon: About What Should Not be Forgotten When Working with Personnel," *Krasnaya Zvezda*, February 17, 1994, 2, quoted in Timothy Thomas, "Deterring Information Warfare: A New Strategic Challenge, *Parameters* 26, no. 4 (Winter 1996-97): 81.

37. Neil Munro, "Cyberspace Guards Quietly Snuff out Hacker Attacks," *Washington Technology On-Line*, November 21, 1996, <<http: www.btg.com/wtonline/issues/1996_Nov_21/front_news/ front_news1. html__9224-6>, December 9, 1996.

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40. T. R. Reid, "Tune In, Log On," *The Washington Post*, December 1, 1996, *Book World*, 3.

41. Timothy Thomas, "Deterring Information Warfare: A New Strategic Challenge, *Parameters* 26, no. 4 (Winter 1996-97): 90.

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59. Winn Schwartau, *Information Warfare, Cyberterrorism: Protecting your Personal Security in the Electronic Age*, 2d ed. (New York: Thunder Mouth Press, 1996), 221-231.

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62. Ibid., 278.

63. Ibid., 163.

64. Sakkas uses the term "merchacker" to refer to a super hacker who offers his computer cunning to the highest bidder.

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66. Deutch, 2.

67. Sakkas, 167.

68. White paper on Information Infrastructure Assurance, 2.

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82. *Information Security—Computer Attacks at Department of Defense Pose Increasing Risks* (Washington: U.S. Government Accounting Office, May 22, 1996), 16.

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9

CIVIL-MILITARY RELATIONS AND GENERAL MAXWELL TAYLOR

GETTING IT RIGHT AND GETTING IT WRONG!

RANDAL G. TART

Richard Kohn claims that a corrosion of civilian control over the military has occurred and, if left unchecked, could pose a serious threat to American government (and society) as we know it.[1] Kohn is particularly fearful of very powerful military men. He believes their relative influence in governmental decisionmaking has become so great that it endangers the national well-being. Kohn admits that civil-military relations are situational and that chances of a coup d'etat are virtually nil. And, he states that civilians "decide the extent to which the professional military is to be consulted and heard and where to divide responsibility and authority between civilian and military" business.[2]

Yet Kohn believes the demarcation line defining civilian control and proper civil-military relationships "has never been, and cannot be, determined with clarity and finality."[3] This fact, coupled with ignorance on the part of the American military about civilian control and proper civil-military relations,[4] means abuse of civil authority might occur and the results could be disastrous. He demonstrates his point by showing how this situation has already led to a bonafide crisis—Kohn called it a "mutiny in the ranks"[5]—in which General Colin Powell led the military in taking "full advantage of a young, incoming president with extraordinarily weak authority in military affairs" and "rolled" him over the issue of gays in the military.[6]

This paper will provide a second opinion on Dr. Kohn's dire prognosis of the health of civil-military relations in this country. Specifically, it will contest any notion that powerful military leaders pose a threat to civilian rule in the United States. It will examine two situations involving a powerful officer, General Maxwell Taylor, and the two presidents he directly served as advisor. In the first situation, a highly confrontational one between Taylor and President Eisenhower, Taylor got his civil-military relations right. He vehemently bucked Ike over the President's dangerous defense strategy of "massive retaliation" and, in so doing, protected the best interests of the nation.

In the second situation, General Taylor got his civil-military relationship with the President all wrong. His very amicable relations with President John Kennedy, during JFK's early, crucial decisionmaking on U.S. intervention in Vietnam, allowed our nation to stumble into a catastrophe in Southeast Asia. The combination of these two situations will demonstrate that America's senior military leaders must always remember their proper place, subordinate to civil authority, but must never forget that, even in their subordination, they have an obligation to stand firm on important national issues, even when it might entail clashing with the President. No less than the nation's well-being could be hanging in the balance.

TAYLOR AND EISENHOWER: GETTING IT RIGHT!

If very strong military men really pose a threat to U.S. governance, as Professor Kohn suggests, then General Taylor's career might serve as a good case in point. For when he served as President Eisenhower's Army Chief of Staff and as Special Military Representative (MILREP) and Chairman of the Joint Chiefs of Staff (CJCS) to President Kennedy, Taylor was widely viewed as the nation's most popular, powerful, and political military man and, by some, as one of this country's all-time great military leaders. David Halberstam called him "the leading military officer of an era," compared him favorably with President Eisenhower, and said he dominated his era much in the way that Marshall had dominated his.[7] By the time Taylor became Eisenhower's Army Chief of Staff, he had already gained enormous fame serving under Ike as combat commander of the 101st Airborne Division in Normandy; had built on that fame as commander of the 8th Army, fighting Communist aggression in Korea; and was conceded as the odds-on pick for Chairman of the Joint Chiefs of Staff.

Still, as Taylor assumed his duties as Army Chief in 1955, he was aware that his fame and friendship with Ike would be of little use to him in his dealings with the President on the national defense strategy of "massive retaliation." According to David Halberstam, Eisenhower's views on national defense were different from what one might expect of a retired General of the Army. By fall 1953, his administration had begun formulating what it called the "New Look," which clearly "reflected the President's belief that the true strength of America came from a healthy economy and that a heavy defense budget would diminish that strength."[8] Ike's views were perhaps best stated by his Treasury Secretary, George Humphrey, who said, "There would be no defense, [but only] disaster in a military program that scorned the resources and the problems of our economy—erecting majestic defenses and battlements for the protection of a country that was bankrupt."[9] Eisenhower felt an overwhelming need to give the country a tax break to shore up an economy weakened by the past decade's two major wars, and he proposed to do so by making big cuts in defense spending.[10]

Eisenhower was supported in these aims by Admiral Arthur Radford, his hand-picked successor to Omar Bradley as Chairman of the Joint Chiefs of Staff (CJCS). Radford was a forward-thinking military man who believed that modern technology and strong air power, supplemented with nuclear weaponry, could provide "limitless" military capability[11] on the cheap, albeit at the expense of Army ground forces. His position on meeting defense needs with a reduced budget was just what Ike wanted: Radford felt the cuts would be "possible if the JCS could narrow its options, plan for fewer contingencies, and assume that in almost any conflict nuclear weapons would quickly be used."[12] Eisenhower was willing to accept the risks inherent in such pre-emptory use of nuclear weaponry in order to gain the budget cuts he sought. So, he quickly "bought off" on Radford's plan—and the result became known as the military strategy of "massive retaliation."[13]

"Massive retaliation" was a highly debatable defense strategy. It dictated that the United States "would react instantaneously, to even the smallest provocation, with nuclear weapons."[14] It was thought that the mere knowledge of this strategy would deter any enemy from daring to provoke us. And, even if they did, "massive retaliation" guaranteed that the U.S. would win quickly; thus, "all future wars would be short and inexpensive."[15]

This strategy was not only highly debatable but also highly debated. Radford supported the policies, but other uniformed leaders, including Taylor's old friend, mentor and former combat commander, Matthew Ridgway, bitterly and defiantly opposed them. So, General Taylor could not have been too surprised when both Secretary of Defense Charles Wilson and Eisenhower personally interviewed him—measuring his willingness to play politics by specifically asking him if he would obey their orders even when he didn't agree with them—before Ike would nominate Taylor to replace Ridgway as Army Chief of Staff.[16]

Yet, promises or no, General Taylor simply could not force himself to support so risky a venture as placing all the nation's defense eggs in the "massive retaliation" basket. General Douglas Kinnard wrote that, even though he made those promises, Taylor

was not long into his first tour as Army Chief of Staff before he "ran head-long into strategic issues that . . . brought him into conflict with the president."[17] Over the course of Taylor's 4-year tenure, the conflict became red hot as Eisenhower steadfastly stuck to his strategy as a way of getting "better bang for the buck"—and as he required his uniformed advisors to publicly "salute the flag" and support his policies.

General Taylor wouldn't succumb. He resolutely refused to support presidential policies he thought were wrong-headed and dangerous. From his personal experience as an Army general with an extensive background in leading ground troops in combat and in witnessing, first-hand, undelivered promises of air power prowess in support of ground attacks,[18] Taylor knew that air power was a less effective weapon than many officers were willing to admit. And, he doubted that nuclear weapons would or could play as important a role in the defense of the nation as the President and his supporters wanted to think. He and most military planners came to believe "that nuclear weapons had produced a state of mutual deterrence . . . [and that] future conflicts were likely to be of a limited nature, with an emphasis on ground-force capability."[19] Thus, Taylor viewed "massive retaliation" as being outright dangerous and that "unless something changed . . . the country might end up blundering into a nuclear war, just because we were not capable of fighting any other kind."[20]

Taylor stood his ground even though he was often accused by civilians in the Eisenhower administration of not being a team player.[21] And in this situation, he wasn't. "Massive retaliation" was too dangerous, and the national defense stakes were too high. His strong sense of duty allowed him no choice but to stand tall and defy, sometimes bitterly, his old combat commander throughout his two terms as Army Chief of Staff.

Finally, on March 9, 1959, all the fighting came to a head. General Taylor did the unthinkable: he testified, "most vehemently" of all the service chiefs, against the President's defense policies before Senator Lyndon Johnson's Defense Preparedness Subcommittee.[22] In Taylor's own words, his "open testimony . . .

had a countrywide impact . . . it revealed for the first time the extent of the schism within the Joint Chiefs of Staff and the division in their views on Massive Retaliation and related matters of strategy."[23]

It also politically embarrassed the President and greatly irked him. In response, Ike instructed General Nathan Twining to "caution the Joint Chiefs that the military in this country is a tool and not a policy-making body; the Joint Chiefs are not responsible for the high-level political decisions." Kohn, who said the military "must abandon participation in public debate about foreign and military policy, and stop building alliances . . . in Congress,"[24] would no doubt relate well with how Eisenhower must have felt at this moment. At the end of his meeting with Twining, Ike dejectedly philosophized "on the difficulties of a democracy running a military establishment in peacetime."[25]

General Taylor understood those difficulties all too well. At this point, he was overcome by "an overwhelming feeling of frustration, even a sense of defeat."[26] On the very day that he testified before Congress against Eisenhower's defense strategy, he announced his retirement from the Army. Though it was the Army's turn to provide the next Chairman of the Joint Chiefs of Staff, and though he was without peer in all the uniformed services, General Taylor knew that his fights with his Commander in Chief over national military strategy had cost him any chance of being promoted to the highest military position in the land.

Taylor was right in this thinking. Eisenhower could not afford to have as his senior military advisor an officer with whom he fundamentally disagreed on basic defense issues. Nonetheless, Ike sent an emissary, General Andrew Goodpaster, to try to talk Taylor out of retiring by offering him the very prestigious position of Supreme Allied Commander Europe (SACEUR) in lieu of the CJCS job. Taylor was tempted by the offer, but he graciously turned it down. He told Goodpaster that he thought the administration's defense policies were dangerous and he "had decided that, for the good of the country, he had to leave the service and as an unfettered civilian take his case to the American public."[27]

General Taylor's strong moral stance on this issue—his refusal to have his silence purchased with the promise of a prestigious assignment—led Colonel Harry Maihafer to include this decision in his book of 15 courageous decisions that demonstrate how America's military leaders should put country and honor above self in such morally ambivalent situations. Maihafer lauds Taylor's selfless decision to turn down a plum assignment so he could be free to tell the "unfettered" truth about the grave dangers facing the country. In so doing, Taylor was choosing the "harder right instead of the easier wrong," the moral imperative for which he was taught to pray at West Point.[28]

Professor Kohn would no doubt disagree with Colonel Maihafer's appraisal of the greatness of General Taylor's brave decision for two reasons. First, Kohn disagrees that even *retired* military officers have a right to publicly state their "unfettered" views. He writes that they are part of a "distinct military community in the United States" that poses a "threat to civilian control" because it may possess a "sense of identity, interests, and perspectives separate from the rest of society, feel "abused and alienated," and be "willing to speak out or even lash out . . . as a separate military interest."[29]

And, Kohn would likely find nothing morally courageous in such a perfect example of what is wrong with the system of civilian control over the military. He wrote:

> What is rarely grasped, even by those who are involved, is that both structurally and operationally, the [civil-military] system does not work smoothly much of the time. The military does obey orders and civilians do make the major decisions, but beneath the surface the process consists of continual conflict and struggle for influence, which on occasion blows up and flares into major confrontation. . . . Sometimes, even when there appears to be harmony, there is on-going negotiation, compromise, conflict, and maneuvering, the reality of which makes "civilian control" a far more complicated and less certain business.[30]

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Professor Kohn is wrong on both these points. The very existence of a retired General of the Army serving as President and taking a strong antimilitary stance on defense issues argues against Kohn's first concern. In fact, Ike's position on national defense serves as a powerful testament to the dangers inherent in anyone's generalizing too broadly about how powerful military men, active or retired, might respond to the needs of the nation.

As for Kohn's second point, General Taylor's fights with Eisenhower over national defense strategy do appear to fit his description of dysfunctional civil-military relations in America. Yet, Ike would see the whole business as far less complicated and much more certain than Kohn suggests. Even though the President harbored reservations about the problems inherent in a democracy's leading a peacetime military establishment, he would likely disagree outright with any contention that his administration's subterranean, bureaucratic in-fighting posed a threat to the nation. For, while Eisenhower expected an ultimate consensus and demanded a public show of solidarity with his policies, he nonetheless encouraged the type of subterranean clashes among his civilian and military advisors that Kohn considers dangerous.

According to John Burke and Fred Greenstein, one "of the most conspicuous qualities of the Eisenhower administration's meetings was the spirited, no-holds-barred debate that marked them. The participants did not appear to hold back out of deference to the president or to tailor their advice to him."[31] And Ike approved. In his memoirs, he attested to the value he placed on such open airing of disagreement. "Such things as unanimity in a meeting of men of strong convictions working on complex problems" are often impossible.[32] He later said that his method of making important decisions was to get "courageous men, men of strong views" before him and "let them debate and argue with each other."[33]

Debate and argue are just what General Taylor did, until he couldn't take it any longer. Then he went before Congress and told Senator Johnson's subcommittee just what he really thought about the dangers inherent in President Eisenhower's national defense strategy that relied so heavily upon nuclear weapons. In the heat of

the moment, Ike condemned the political nature of Taylor's (and the other Chiefs') testimony before Congress. But, in military circles, where proper military behavior really *is* understood, there would likely be much room for debate about the appropriateness of Taylor's congressional testimony against his Commander in Chief. Loyalty is a supreme virtue of soldiership and a healthy respect for loyalty is deeply rooted in the customs and traditions of our military services. When Taylor went before the congressional subcommittee to testify against Eisenhower's policies, he was clearly guilty of being disloyal to his President.

Yet, one might correctly argue that in this act of disloyalty, Taylor was, in effect, placing a greater premium upon even higher military values that, from his earliest days as a West Point cadet, had been deeply ingrained and come to serve as his overriding moral compass: Duty, Honor, Country. For, Taylor's first loyalty was not to his president but to his country, and he felt absolutely duty-bound to stand up and fight for his nation's well-being. His sense of honor would not have allowed him to act any other way. Thus, he correctly testified before Congress—he owed it to his nation. And, he just as correctly chose to retire in the aftermath. He owed that to his Commander in Chief.

Examining this situation with nearly 40 years' hindsight as a guide, one must conclude that no enduring harm arose from this bitter exchange between this strong military man and the President he served. From a national perspective, any lessons drawn would have to be positive. President Eisenhower's reliance on "massive retaliation" bought him maneuver room to improve a stagnating economy. The public debate over his defense strategy ultimately resulted in its being replaced with a more suitable reliance upon conventional forces to counter the actual threats facing the country. The national tradition of civilian dominance over the military was strengthened when General Taylor chose to stand before Congress and have his say—and then to resign in deference to the man who was really in charge. In so doing, Taylor placed the debate in the public realm where it belonged, and then he voluntarily relinquished his *official* rights as a debater. The only casualty in this

confrontation between a powerful soldier and his civilian superiors was the soldier, and in such matters, the military tradition of selfless service wouldn't have it any other way. The nation's best interests were served.

In contrast, the best interests of the nation are less likely to be served when powerful military men summarily mute their strongly held convictions on important national matters out of sheer deference to civil authority. In *The Commanders*, former Secretary of Defense James Schlesinger voiced this concern when he warned a successor, Defense Secretary Dick Cheney, that "the problem with the military was not that the senior officers were uncontrollable, but the opposite. After a lifetime of taking orders, generals and admirals were, if anything, too compliant."[34] Schlesinger's concerns run precisely counter to those of Kohn and are worthy of further examination. We shall do so by reviewing a second situation involving General Maxwell Taylor and the highly regrettable civil-military relationship he enjoyed with President John Kennedy during two early, crucial decisions on U.S. intervention in Vietnam.

TAYLOR AND KENNEDY:
GETTING IT WRONG!

After retiring as Army Chief of Staff, Taylor's first "unfettered" civilian action was to publish *The Uncertain Trumpet*, a "trenchant critique" of his former President's national defense strategy.[35] In a move that would surely dismay Kohn, this retired general timed the book's publication to coincide with the January 1960 opening of Congress, hoping that it would spur a great debate on national security during Ike's final year in the White House. As General Kinnard said, "It did that and more, turning out to be the basis for the defense program set forth by John Fitzgerald Kennedy (JFK) in his successful 1960 campaign against Richard Nixon."[36] It also led to Kennedy's recalling Taylor to active duty and appointing him to serve as Special Military Representative (MILREP) to the President. This position was created especially for Taylor by JFK to fill a civil-military void that resulted from Kennedy's strained relations with the Pentagon over the Cuban Bay of Pigs fiasco.[37]

Special Military Representative was an appropriate title for General Taylor in his return to active duty as a four-star general in the JFK White House, because his relationship with the Kennedy clan was nothing if not special. In retrospect, it seems to have transcended the professional bounds of propriety that normally exist in civil-military relations between presidents and their military advisors. General Earl Wheeler said, "Taylor had an influence with President Kennedy that went far beyond military matters."[38] Kennedy saw Taylor as "dispassionate and rational, indeed more like himself than anyone else in the new Administration."[39] Even the MILREP's office, located in the White House near the President's Oval Office, suggested this was no ordinary civil-military relationship. Taylor had quick entree to JFK and he knew he "always had the President's confidence."[40]

Other JFK people viewed the handsome and charming Taylor as almost the perfect character right out of Camelot.[41] Bobby Kennedy "worshipped" Taylor, considered him a "Renaissance man" and constantly promoted him with the President.[42] He even named his son, Maxwell, after the general. And many Kennedy advisors stood in awe of Taylor.[43] They viewed him as a *"cultured* war hero"—a *good* general, different from the old-fashioned Eisenhower men. They believed Taylor would be a Kennedy general, at least as loyal to them as to his uniform and institution.[44]

Taylor willingly became a Kennedy general in precisely the sense the Kennedy people hoped. He quickly became more politicized than any top military advisor to date. The Joint Chiefs of Staff distrusted Taylor and considered him a White House man,[45] but this transition was easy for him —Taylor thought the Kennedys to be just as special as they considered him. He became especially close friends with Robert Kennedy, and they retained tight social bonds until Bobby was assassinated.[46] At RFK's death, Taylor, overcome with shock and grief, wrote, "I shall always be indebted to him for changing the course of events in a way which allowed me to play a small part in the historical drama of John F. Kennedy, to know Ethel, Jackie, and the others of his extraordinary family and to have my life enriched by the friendship of Bobby Kennedy."[47] In

his autobiography, he totally avoided discussing personalities, pro or con, except for "testifying to the author's admiration and affection for the Kennedy family."[48]

These feelings of admiration and affection were clearly mutual and pretty "heady stuff" for the general after 4 frustrating years in the Eisenhower administration.[49] In American history, no more amicable civil-military relationship has likely existed since President George Washington served as his own Commanding General while squelching the Whiskey Rebellion in 1794. But while this situation made for a harmonious civil-military relationship—one likely in close consonance with how Professor Kohn might envision a civil-military utopia[50]—it was, in reality, exceedingly dangerous for the country. For in such an environment, an advisor, even a very powerful military one, found it difficult to stand up and question his President or the best and brightest knights that served him.[51]

As MILREP and then later CJCS, General Taylor found it impossible to question too vociferously anything President Kennedy wanted to do. Of his battles against Ike, Taylor later wrote, "While I never particularly minded the conflict with my Pentagon peers, I felt keenly the increasing coolness of my relations with the President."[52] In his second coming as a four-star general serving directly as a presidential advisor, it seems as if Taylor resolved that he would never again suffer such uncomfortable presidential coolness. The record is replete with instances in which he sought to avoid it. According to General Kinnard, he "moved cautiously, offering advice only when asked . . . and . . . was very careful 'not to get his hands dirty [or] to leave any bureaucratic trail' of his actions."[53] He chose to "go along" on issues with which he did not agree, because, to do otherwise, would be "bucking city hall."[54] No one could justifiably accuse him of not being a team player[55]—staff members noticed that he would never recommend anything "that he knew McNamara would not approve."[56] And, especially important, during this period, he developed a terrible, dangerous "bureaucratic proclivity—a failure to stand up and be counted when in the minority."[57]

These qualities in the President's principal military advisor had tragic consequences for the nation as the Kennedy administration thumped the "war drums" ever more loudly in favor of U.S. military intervention in South Vietnam. Taylor, the only military leader in whom JFK retained any confidence,[58] had to know that intervention was a mistake. He was a charter member of the "Never Again Club," a group of embittered Korean War veterans who "vowed that never again would they fight a land war on the Asian mainland without nuclear weapons."[59] As a protégé of Army Chief of Staff Matthew Ridgway, Taylor was well aware of Ridgway's 1954 in-depth study that showed clearly the dangers of getting sucked into a land war in the steamy jungles of Vietnam and that spurred Eisenhower to decide against intervention.[60] And, as CJCS in 1963, he participated in a "war game," SIGMA I, that demonstrated scary and depressing news: At least a half-million U.S. combat troops would be required to achieve victory in a ground war in Vietnam.[61]

Even so, Taylor would not stand up against the known intervention wishes of his President. Rather than attempting to block JFK's dangerous policies as he had during his Ike years, he became complicit in the blunders and miscalculations: Halberstam called him "the key military figure in all the estimates"[62] that went so badly awry. He became a major part of the problem when, as the most prestigious knight of Camelot and virtually its only *heard* voice in military affairs, he should have led the charge against intervention. However, during Taylor's MILREP and CJCS years, he failed to do so, and his failures allowed JFK to make two major policy blunders on Vietnam intervention.

The first occurred shortly after Taylor returned to active duty. In it, Kennedy "loaded the dice" in favor of intervention by assigning Taylor and Walt Rostow, a known war hawk,[63] to lead a team to Vietnam to assess a request from President Ngo Dinh Diem for increased U.S. military aid. According to General Kinnard, in his final report on the visit, General Taylor, over the objections of several lesser known members of the traveling party, stretched the truth to give his President what he wanted:[64] a recommendation "for an enormous increase in advisers and support personnel that . . .

Kennedy approved. It is what JFK was anticipating when he dispatched his military representative, and it is what he got."[65]

This was a small and seemingly innocuous first step, but it has come to be viewed as a benchmark[66] in the history of the Vietnam War. It set the tone of future debates on escalation and guaranteed those escalations would occur.[67] From this point on, there would be no turning back, and Taylor knew better. His recommendations to increase American involvement, to risk slinking into a land-war in Asia, contradicted everything he knew about Vietnam and the public positions he, as an original "Never Again" man, had previously taken. Yet, he pushed for troop increases because he knew they were what the President wanted.[68]

In his memoirs, Matthew Ridgway cautioned against officers' becoming too politicized;[69] he said they should always present their "honest views fearlessly, forthrightly, objectively"; and warned that the "most dangerous advisor to have around was the yes-man, and the most useless is one who thinks of self instead of service."[70] As a Kennedy confidant, Taylor chose not to heed the advice of his old mentor. When it came to JFK, he lost his objectivity and, in the process, became a dangerous yes-man who would not state his honest views fearlessly and forthrightly. In failing to argue his convictions against fighting in Vietnam, Taylor let his President down. His recommendations for significant (and secretive) increases in logistical support and personnel (including advisors and 8,000 combat troops to be disguised as "logistical legions" to deal with a Mekong delta flood) made Taylor complicit in "Americanizing" the war,[71] even though he must have foreseen the grave dangers involved. Both his actions and inactions aided and abetted Kennedy's steering the United States "far deeper into the quagmire" of the Vietnam War.[72]

The President must have approved of Taylor's loyal flexibility. JFK soon rewarded his MILREP with a promotion to serve as Chairman of the Joint Chiefs of Staff, the position Eisenhower had denied Taylor because of the morally resolute position he had taken against Ike's defense policies. Such resoluteness would not recur in the Kennedy years. The highly moral Taylor of old simply never

"stood up" during his second coming as a four-star presidential advisor. And the results proved calamitous as Kennedy faced, virtually unarmed of the strong, moral military advice he needed, his second grave decision on Vietnam.

This second decision on intervention involved the question of whether the United States should support the overthrow of the South's inept President. Stanley Karnow has provided an in-depth account of this gruesome event and showed that, contrary to U.S. denials, the Kennedy administration was involved in the bloody coup d'etat.[73] Making matters worse, the Kennedy men spawned the coup but utterly failed to consider its potential tragic consequences. Thus the Ngo brothers' murder became a virtual certainty,[74] and the tiny, faltering nation, already shaky in its efforts to thwart Communist insurgency, was left with no one "qualified to take over."[75] In Taylor's own words, this was "one of the great tragedies of the Vietnamese conflict and an important cause of the costly prolongation of the war into the next decade."[76] Because of this coup, America's commitment to preserving South Vietnam became both a moral and practical obligation; from this point forward, the men of Camelot had too much personal interest vested in South Vietnam to ever seriously consider turning back.[77]

Taylor's part in all this is clear. Although he was not directly involved in planning the coup, his actions, once he discovered it, were inauspicious at best and culpable at worst. He had a full understanding of the situation and of its probable consequences. Spurred by his military protégé and commander on the ground, General Paul Harkins, Taylor initially stood very tall and strongly rejected the coup plans.[78] But, as the other Kennedy advisors pressed forward, his "bureaucratic proclivity" got in the way; he sat down and muted his objections. As General Kinnard said, "What Taylor did here is not what mattered; the problem was what he failed to do at this time—to be counted and to force the issue with the president."[79] The old, highly moral and resolute Taylor would have stood firm and bucked his President on this grave issue, but not the new 1960s version of Taylor, and definitely not this

President. As Kinnard said, "Kennedy, whatever his ambivalence toward Diem, again got what he asked for"[80] from Taylor.

The argument has been made that Taylor may have felt that the coup was a political, not military, issue, and as JCS Chairman, he had no responsibility or right to speak up.[81] If Taylor felt this way, his sitting mute as Kennedy civilians drove the violent overthrow of President Diem would be an action that Professor Kohn might applaud.[82] Yet, this situation serves as a prime example of the fallacy in one's thinking that military advisors should restrict their advice to only military matters. Not all issues fall precisely into an economic, political, social, or military category. Important national issues are so complex they likely will transcend several categories.

The coup against Diem is a perfect example. Karnow makes clear that Kennedy's Ambassador to South Vietnam, Henry Cabot Lodge, was the driving force behind the coup. He saw it in political terms,[83] and he was angered that General Harkins persisted in getting involved, "jockeying behind his back."[84] Yet, Karnow shows that Harkins saw this matter more clearly than virtually anyone, and his was a military view. He was worried that the coup "could wreck the war effort against the Vietcong."[85]

Clausewitz, who felt that asking soldiers for *purely military advice* made no sense and was damaging and unacceptable,[86] would have no problem with Harkins' getting involved. Neither would former JCS Chairman Admiral William Crowe. In fact, Crowe would argue that, regardless of Taylor's thinking, he had no latitude in taking a position on a matter so important to the nation. In *The Commanders*, Crowe stated his belief that the Chairman of the JCS has "an obligation, at least on the major questions, to honestly and fully give the President his views." And he has "to give more than just military advice;" it must include "political, diplomatic, and economic recommendations" as well. To do otherwise would be just "a copout. A presidential adviser had to be willing to place his personal prestige on the line and say, here's my overall conclusion. Advice without a bottom line meant little. It was a lot to ask, but that's what [the CJCS] were paid for."[87] If the advice was rejected, the military advisor "could choose to resign, or stay on and accept

the decision. There was no way around giving advice direct and undiluted."[88]

Well, there was one way around giving the advice direct and undiluted—just sit down and not give any. That is what General Taylor did in this instance. He became the "useless" advisor that General Ridgway so disdained, choosing to just let matters take their sorry course. This is the *real* improper military behavior about which all Americans should be worried.

It is debatable whether Taylor's bucking President Kennedy on this issue would have made any difference. He never placed his personal prestige on the line with Kennedy, so there is no way of knowing. What is known is that the Joint Chiefs of Staff blamed Taylor for not fighting the President more strongly against the coup.[89] And, some historians believe that, at this moment when his word still carried tremendous weight as the most prestigious American then in uniform, his would have been a powerful voice before a Senate committee against intervention.[90] Yet, Taylor had already "been there, done that"— and lost. He showed no inclination for an encore performance against JFK. We will never know if a strong General Taylor, resolutely "bucking" Kennedy's intervention moves into Vietnam, would have made any difference because Taylor was too interested in maintaining good relations with his Commander in Chief to try. "Vietnam," the boondoggle we have come to know and hate, may well be the result.

CONCLUSION

The conclusion to be drawn from Taylor's two tours as a presidential advisor is that strong military leaders, by fighting for that which they believe in, do not in any way endanger civil rule in the United States. One must be cautious in generalizing too broadly from anecdotal evidence, but the cases reviewed here demonstrate that, while confrontational civil-military discourse is not desirable, it probably does not pose a threat to American values and freedoms and has worked to their overall advantage. In very important matters, the military position may ultimately be stated vigorously and loudly, but our continuing tradition of civil dominance over the

military guarantees that the military messenger will always yield to proper civil authorities for the final decisionmaking. Each time a civil-military flare-up occurs, as it did between Taylor and Eisenhower, and the strong military man submits to presidential authority, the traditions of civil primacy grow stronger and our national well-being is enhanced. The real danger facing civil rule over the military is in situations where apparently strong military men are incapable, for whatever reason, to do the job for which they are paid—to deliver advice direct and undiluted. As in the case of Kennedy's early decisions on Vietnam, major national calamity may result when military leaders mute their input on important policy decisions.

NOTES

1. Richard H. Kohn, "Out of Control: The Crisis in Civil-Military Relations," *The National Interest* 35 (Spring 1994): 17.

2. Ibid, 15.

3. Ibid, 17.

4. Richard H. Kohn, "Civil-Military Relations Debated," *The National Interest* 36 (Summer 1994): 29.

5. Kohn, "Out of Control," 4.

6. Ibid, 13.

7. David Halberstam, *The Best and the Brightest* (New York: Random House, 1972), 472.

8. David Halberstam, *The Fifties* (New York: Villard Books, 1993), 396.

9. Ibid.

10. Ibid.

11. Ibid, 397-398.

12. Ibid, 396.

13. Ibid.

14. Ibid.

15. Ibid, 397.

16. Colonel Harry J. Maihafer, *Brave Decisions* (Washington: Brassey's, 1995), 204.

17. General Douglas Kinnard, *The Certain Trumpet* (Washington: Brassey's, 1991), 41.

18. Halberstam, *The Best and Brightest*, 466.

19. Maihafer, 206.

20. Ibid, 208.

21. Ibid, 206.

22. Kinnard, 49-50.

23. Ibid.

24. Kohn, "Civil-Military Relations Debated," 30.

25. Kinnard, 50.

26. Maihafer, 208.

27. Ibid.

28. Maihafer, 207.

29. Kohn, "Civil Military Relations Debated," 31.

30. Kohn, "Out of Control," 16.

31. John P. Burke and Fred I. Greenstein, *How Presidents Test Reality, Decisions on Vietnam, 1954 and 1965* (New York: Russell Sage Foundation, 1989), 54.

32. Ibid.

33. Burke and Greenstein. 54-55.

34. Bob Woodward, *The Commanders* (New York: Simon and Schuster, 1991), 80.

35. Kinnard, 51.

36. Ibid.

37. Ibid, 55.

38. Ibid, 205.

39. Halberstam, *The Best and the Brightest*, 163-164.

40. Kinnard, 69.

41. Stanley Karnow, *Vietnam, A History* (New York: Viking Press, 1983), 251.

42. Kinnard, 52.

43. Halberstam, *The Best and the Brightest*, 123.

44. Ibid, 163.

45. Kinnard, 212.

46. Ibid, 78.

47. Ibid, 191.

48. Ibid, 195.

49. Ibid, 62.

50. Kohn writes almost wistfully of the civil-military relations that existed during the Kennedy and Johnson administrations, saying "During the Kennedy and Johnson administrations in the 1960s, Secretary of Defense Robert S. McNamara restored a degree of civilian control " over the military only to have it weakened by successive Republican

administrations. One gets the feeling that Kohn thinks of these as the "good ol' days" of civil-military relations ("Out of Control," 4).

51. Failing to ask hard questions was a major, fundamental problem for the Kennedy (and later the Johnson) administration, which was populated by some of the most gifted and arrogant minds in the country—people whom David Halberstam called the best and brightest. He wrote that a "remarkable hubris permeated this entire time" (*The Best and Brightest*, 123) and described how an exciting sense of American elitism led these men, great in their own minds, to attempt, unquestioningly, impractical, even impossible feats (such as building Western style nations on Southeast Asian culture) (ibid., 41). Karnow described the same phenomenon as a belief in U.S. "omnipotence" and a "myopic sense of 'can-doism'" (*Vietnam: A History*, 254). And John Burk and Fred Goldstein discuss Irving Janis's concept called "groupthink"—the tendency on the part of very intelligent members of cohesive groups to engage in uncritical thinking, thus reaching premature and overly optimistic decisions—and how the concept led the Kennedy men to take and allow unchallenged actions that they should have known would be self-defeating (*How the Presidents Test Reality*, 6).

52. Maihafer, 207.

53. Kinnard, 67.

54. Ibid.

55. According to Kinnard, Taylor wrote a memorandum to McNamara on retiring as Chairman in 1964 to become Ambassador to South Vietnam. In it, he included "a section at the end called civilian-military relationships in the Pentagon." This section included these Taylor words: "During my service as Chairman, I have worked to the best of my ability to attenuate or, if possible, to eliminate the difference—sometimes real, sometimes imaginary—between civilian and military authorities in the Department of Defense. I hope that our own personal relationship, of which I have been very proud, has set an example for those around us and has contributed to proper team play (*The Certain Trumpet*, 133).

56. Kinnard, 77.

57. Ibid, 213.

58. Ibid, 67.

59. Halberstam, *The Best and Brightest*, 466.

60. Matthew Ridgway, *Soldier: The Memoirs of Matthew B. Ridgway* (New York: Harper and Brothers, 1956), 274-277.

61. Karnow, 399.

62. Halberstam, *The Best and Brightest*, 656.

63. Ibid, 156. Halberstam seems justified in his assessment that JFK "loaded the dice" by assigning Walt Rostow and General Taylor to lead this fact-finding mission to Vietnam. Kennedy had to know that these two particular men would likely recommend increased American involvement. Walt Rostow was renowned in the Kennedy and Johnson administrations as a war hawk. He pushed strongly for intervention and converted many to his cause. Author Noam Chomsky, in 1993, called Rostow "the superhawk" and provided a contemporaneous quote by Michael Forrestal, a JFK and LBJ National Security Council member, that referred to "Kennedy doves" who were leaning toward escalation as "adherents of Rostow" [*Rethinking Camelot: JFK, the Vietnam War, and U.S. Political Culture* (Boston, MA: South End Press, 1993), 94]. Taylor was not so hawkish about fighting a land war in Asia, but he surely was influenced in his decision to recommend an increased U.S. troop commitment—to give JFK what he wanted—by a Kennedy decision made just 6 months before the Taylor-Rostow trip in October 1961. In that decision, JFK demonstrated clearly his strong leanings toward defending perceived U.S. interests in Southeast Asia. He opted to "up" the military ante in Vietnam, even to the point of breaking international law by surreptitiously sending an *additional* 100 American military advisers in contravention of the Geneva Accords that disallowed any buildup of manpower in South Vietnam. (Karnow, 250). As JFK's MILREP, Taylor must have been involved in this decision and, no doubt, got his Taylor-Rostow mission cue from it.

64. Halberstam compared Taylor's trip report with that of Matthew Ridgway in 1954 which convinced Eisenhower of the futility of intervention in Vietnam: "When Ridgway . . . investigated the possibility of U.S. troops in Indochina, he maximized the risks and minimized the benefits; now Taylor was maximizing the benefits and minimizing the risks" (*The Best and the Brightest*, 172).

65. Kinnard, 218.

66. Ibid, 218.

67. Ibid, 104.

68. It is debatable whether JFK really wanted Taylor and Rostow to recommend troop increases. Professor Lloyd Gardner argues that Kennedy did not want to engage additional troops because, in part, he did not believe that Vietnam was vital to American interests, e.g., Gardner argues that JFK did not believe in the "domino theory" and, thus, Saigon's falling would have little impact on the United States. In this argument, Kennedy was talked into troop escalations against his better judgment by Taylor, Rostow and others in the JFK administration. [Lloyd C. Gardner,

Pay Any Price: Lyndon Johnson and the Wars for Vietnam (Chicago, IL: I. R. Dee, 1995), 57-60]. No doubt, JFK did not desire a massive troop escalation and this explains his decision to withhold the huge (8,000 man) combat unit that Taylor recommended. Most writers would probably agree that Kennedy did not really *want* to commit additional troops, but that he had no choice: Supporting a staggering South Vietnamese government in gesture as well as word was necessary. It was also the only political move JFK could smartly make without running the risk of looking "soft" on communism. Stanley Karnow argued that Kennedy did, in fact, believe in the domino theory and fully subscribed to the policy of containment. In JFK's own words, he saw Vietnam as a "proving ground for democracy in Asia" and a "test of American responsibility and determination." Our involvement there was part of his "pay any price" policy. Thus, he must have concluded (probably reluctantly) that we had to "prop up" the Diem regime with American troops. In the end, his actions had clearly spoken louder than any words. At his death, he had approved the assignment of 20,000 soldiers to South Vietnam, most of them in violation of the Geneva agreement. (Karnow, 247-253). As far as Taylor's part in the argument goes, he later described his recommendation to JFK to commit 8,000 combat troops as a "deliberate straddle," meaning, according to Karnow, that he merely wanted to give the President an option. In giving Kennedy this option, Taylor contravened many of his previous positions on Vietnam and other areas that had formerly been important to him. His report downplayed the problems inherent in fighting in the Vietnamese jungles, saying that South Vietnam "is not an excessively difficult or unpleasant place to operate." He also said that "North Vietnam is extremely vulnerable to conventional bombing. . . . There is no case for fearing a mass onslaught of Communist manpower into South Vietnam. . . . if our air power is allowed a free hand against logistical targets" (Karnow, 252). Taylor knew these statements were not totally truthful. The first ran exactly opposite of what General Ridgway's in-depth study and report to Eisenhower had shown. And Taylor had spent four long, weary years as Army Chief of Staff arguing against the Air Force's claims of air power greatness on the battlefield. Now, for some reason, he found it necessary to repudiate all that. Also, see note 63. One can only surmise that Taylor was attempting, as General Kinnard said, to give JFK what he wanted—and he clearly bent his principles to do so.

    69. Ridgway, 331.

    70. Ibid, 351.

    71. Karnow, 252-253.

72. Halberstam, *The Best and the Brightest*, 177.

73. Karnow, 277-311.

74. Ibid, 310-311.

75. Ibid, 299.

76. Kinnard, 128.

77. Ibid.

78. Karnow, 298-299.

79. Kinnard, 218.

80. Ibid.

81. Ibid.

82. Kohn condemned Colin Powell for exceeding the bounds of his JCS Chairmanship by intruding in non-military governmental decisionmaking. He found it very troubling that Powell assumed the role of arbiter of American military intervention overseas and called it an "unprecedented policy role for a senior military officer, and the most explicit intrusion into policy since MacArthur's conflict with Truman." And, Kohn was very uncomfortable with other aspects of Powell's "intrusion into foreign policy," especially the publication of policy statements that seem geared toward affecting U.S. policy in world affairs ("Out of Control," 12).

83. Karnow, 297-298.

84. Ibid.

85. Ibid, 298.

86. Carl von Clausewitz, *On War*, eds. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 607.

87. Woodward, 39.

88. Ibid.

89. Kinnard, 128.

90. Halberstam, *The Best and the Brightest*, 467.

10

THE MACHINE NEXUS

INSTITUTIONAL BIAS AGAINST A CAPABILITIES-BASED FORCE

CLIFF TOOLEY

That which has been is that which will be, and that which has been done is that which will be done. So there is nothing new under the sun. Is there anything of which one might say, "See this, it is new?" . . . There is no remembrance of earlier things.

<div align="right">Ecclesiastes 1:9-11</div>

DISAPPEARANCE OF THE EVIL EMPIRE BROUGHT NOT PEACE TO THE world but merely an ephemeral period of relaxation. This brief moment of world tranquillity was enough to generate within the United States an euphoric dismantling of defense structures. Banking on its theoretical technological edge, the United States postulated that a miniaturized version of its Cold War defense apparatus would be capable of dealing with the new world order. Then tranquillity gave way to a new reality.

CLIFF TOOLEY

The new reality was actually always there, but it had been hidden by the Evil Empire's shadow. Irrational behavior, natural disasters, and purely demonic actions began to manifest themselves around the globe and in the headlines. America's uniformed sons and daughters quickly found themselves sprinting from one crisis to the next. Even as the number of commitments continues to rise, the number of people to fulfill those commitments continues to dwindle. Where is the logical end?

Unfortunately for the people in uniform, the end is not necessarily related to logic. The path that we are on today is being determined by a mind-trap from the past, an unconscious but compelling paradigm—the technological tar baby known as the machine nexus.

The machine nexus (or connection) is one of two counterposed philosophical approaches to matching defense requirements with defense resources. It is an approach rooted in the belief that the battlefield dominated by technology is the most difficult field of conflict to master. As such, the arch of defense should be constructed with machines as the keystone and people as supporting stones. The force is designed with equipment and systems as the core component of its capability, then manned and resourced in relationship to the needs of the machines. Enhancement of capability is achieved through the continued leveraging of technology.

In opposition to this philosophy is the second of the two approaches—the people nexus. It is rooted in the belief that the battlefield dominated by the complexities of humankind is the most difficult to master. As such, the arch of defense should be constructed with *people* as the keystone and *machines* as supporting stones. The force is designed with trained and skilled people as the core component of its capability, then equipped and resourced in relationship to the needs of the people. Enhancement of capability is achieved through the continued leveraging of the skills and abilities of people.

The frantic activity of the men and women of today's Armed Forces, the so-called high PERSTEMPO, is the result of a series of

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governmental decisions made during the period 1955 to 1974 that launched our defense bureaucracy on the path to internalizing and institutionalizing the machine nexus as the philosophical basis of its defense paradigm. The second- and third-order effects of these decisions have had a profound influence upon our way of thinking, to the point that today we are unable to objectively view the requirements, and costs, of the future. Yet, objectivity is paramount to decisionmaking in an era of dwindling resources.

If we are to succeed we must move toward a new paradigm, one that will lead to the achievement of a true "capabilities-based" force, one that strikes a balance between the machine and the people nexus. In order to bring you to that same conclusion, this paper will address three things. First, it will take you on a brief, historical walk through the life of the machine nexus, focusing on the major landmarks that mark its rise to prominence. Secondly, it will illustrate the manner in which its existence today influences our look to the future, particularly in the areas of doctrine, force structure, and resourcing. Finally, it will offer the basis of a new paradigm, one more suitable for the challenges of the future, the vector-based nexus. To begin, however, the goal must be defined.

"CAPABILITIES BASED" DEFINED

capability: n., pl. -ties, the quality of being capable; practical ability

Webster's New World Dictionary

The term "capabilities based" force is the first victim of the machine nexus. Used freely within defense circles as a descriptor of a wide variety of things, the term has become more of a buzzword or bumper sticker than something that is quantifiable. For the bureaucracy, the lack of quantification has a certain degree of desirability because it facilitates justification of any position presented; it promotes the comparison of apples and oranges. If "capabilities based" is the desired nature of our Armed Forces, then what does it mean?

The term's unquantifiable nature is illustrated by the definition of it found in the *Department of Defense Dictionary of Military and Associated Terms*—"the ability to execute a specified course of action."[1] Noticeably lacking in this example is any discernible performance standard; that is, to possess capability requires only the capacity to execute.

Another example found in this same tome is an explanation of what it refers to as a "military capability," that being "the ability to achieve a specified wartime objective (win a war or battle, destroy a target set)."[2] This version frames capability as being a veritable catch-all (or be all) term, broadly grouping such widely diverse ends as "win a war" and "destroy a target set."

The joint community's definitions of capability do not establish the term as a meaningful touchstone. Lack of clarity negates its usefulness in measuring the relative merits of competing interests and gives rise to the emergence of the "can do" mentality—the declaration of possession of ability on the basis of unstructured reasoning. *Joint Vision 2010* states that "Full Spectrum Dominance will be the key characteristic we seek for our Armed Forces in the 21st century."[3] It goes on to say that it "serves as the basis for focusing the strengths of each individual Service or component to exploit the full array of available capabilities and allow us to achieve full spectrum dominance."[4] So, what are these capabilities that are to be exploited?

The Commission on Roles and Missions (CORM) of the Armed Forces defined capability as being "the ability of a properly organized, trained, and equipped force to effectively accomplish a particular mission or function."[5] Critical to the CORM definition is its focus on the balanced mix being targeted toward "accomplishing a particular mission or function." This focus gives recognition to the fact that practical ability has a common sense side to it. A hammer designed to drive a nail cannot practically tighten a nut.

The CORM definition describes a classic, holistic view of capability. Invoking the balance and symmetry of an equilateral triangle, the force would derive its practical ability to accomplish the mission or function through the achievement of an appropriate mix

of people, equipment, and organization and training focused on the particular mission or function it is to accomplish. Pictorially, it might look as follows:

FIGURE 1. THE CAPABILITY TRIANGLE

To speak of capability, therefore, is to invoke a visualization of a force that has the practical ability to fulfill a particular mission or function through its unique mix of people, equipment, organization and training.

THE GENESIS OF THE MACHINE NEXUS

The United States has a strategy based on arithmetic. They question the computers, add and subtract, extract square roots, and then go into action. But arithmetical strategy doesn't work here. If it did, they'd have already exterminated us.

Vo Nguyen Giap , Commander in Chief,
Vietminh Army 1969

The machine nexus owes its existence to a series of governmental decisions made during the Cold War. One by President Eisenhower in 1955 gave birth to the nexus; another by Secretary of Defense McNamara in 1962 added structure to the nexus; a series by Congress from 1949 to 1974 institutionalized the nexus. Combined, they represent the genesis of the current institutional bias.

CLIFF TOOLEY

The period immediately following the conclusion of the Korean War was one of shifting national issues. Domestic concerns rose to the top of President Eisenhower's national agenda. In an effort to free up more of the budget for domestic programs, Eisenhower sought ways to cut the defense budget. As always in a world of certain threats and uncertain allies, cutting defense represented risk taking, not only in national security but in politics as well. Taking such a risk required a marketable justification. For Eisenhower, that was the U.S. technological silver bullet—nuclear weapons.

Eisenhower saw in nuclear weapons a method to scale back expenditures in traditional military forces. Through the leveraging of these unique machines, conventional forces could be drastically cut with the expectation that the mere threat of U.S. application of its technological hammer would deter conflict in any form. It was not an easy sale, however. His World War II subordinate and then current Chairman of the Joint Chiefs, Omar Bradley, did not buy into the technology solution and refused to support the change. As a result, Eisenhower replaced him with Admiral Arthur Radford, a naval officer "whose career had raced ahead, propelled by the force of modern technology."[6]

With a more supportive subordinate, Eisenhower pressed the issue on cutting defense. His primary ally in the cause was then Secretary of the Treasury George Humphrey, who expressed the administration's position: "There would be no defense but only disaster in a military program that scorned the resources and the problems of our economy—erecting majestic defenses and battlements for the protection of a country that was bankrupt."[7] This view was shared by the new Chairman of the Joint Chiefs of Staff, Admiral Radford.

An advocate of supplanting traditional forces with those based on technology, Radford gave Eisenhower the justification he needed by postulating that "military options could be narrowed, fewer contingencies could be planned for, and nuclear weapons could be used early on across the spectrum of conflict."[8] Thus the military hierarchy put forth the belief that technology designed for high-intensity conflict was capable of fulfilling requirements across the

spectrum of conflict through the mere threat of its use. Thus the stars of the machine nexus came into alignment and the paradigm was born.

In the years leading up to 1962, the services essentially did their own thing when it came to justifying their diverse programs, engaging in extensive intramurals to carve out their own niche in the world of capabilities. In 1962, Secretary of Defense Robert S. McNamara came to the conclusion that these intramurals were inefficient and self-defeating. He viewed defense as a large business that required businesslike systems to manage its production efforts. To centralize management and "wrest control" of the services' budgets, McNamara implemented the Department of Defense Planning, Programming and Budgeting System (PPBS).

The intent of PPBS was to cause budgets to flow from programs, programs from force requirements, force requirements from military missions, and military missions from national security objectives.[9] It had, and continues to have, as its major tenet the need to restrict and control change.[10] McNamara designed PPBS so that each service presented its individual program to him in a single book to which he then could apply a classic cost-effectiveness analysis in program discrimination.

After implementation the system evolved along normal business lines such that "in the beginning evaluations emphasized technical merit, defense needs, and adequacy of proposals . . . (and soon) shifted . . . to affordability."[11] This shift to affordability, in combination with the system's fundamental operating tenet of restricting change, caused the machine nexus to become institutionalized by the manner in which it influenced the way decisions were made.

Unforeseen in the adoption of this process was the innate advantage possessed by machines in their adaptability to standard business management processes and procedures. By placing the quantifiable and measurable technology at the center of the equation and moving people with their nonquantifiable nature to the fringe, simple math could be employed; that is, capability could be explained with spreadsheets in the early days and with computer

simulations later on. This mathematical dexterity promoted the rapid spread of the nexus to all areas of the defense management structure through the PPBS system.[12]

Congress was not idle during this period of paradigm shift. During the late 1950s and early 1960s, Congress felt itself to be losing control of the accountability for monies spent; that is, they could not discern what capabilities were being bought. The congressional dilemma was that "few of the (appropriations) are even remotely like endproduct missions, and dollar amounts are not the costs of achieving capabilities in such missions. Instead, the items are collections of objects used in a variety of tasks; and the dollar figures are the sums of selected costs from all of them."[13] In an effort to reestablish fiscal coherency to defense outlays, Congress passed the Congressional Budget Act of 1974 (PL 93-344)—the Act required mission budgeting.[14]

The intent of the Act was straightforward: establish a direct link between capability to fulfill stated missions and financial outlays in the form of appropriations required to fund the capability.[15] The spreadsheet adaptability of machines fit extremely well into this new format; in fact, too well as described by Wayne Allen, Comptroller of the Army during the late 1970s through the 1980s:

> Unfortunately, for the performance/mission budgeting concept, narrow interpretations of Congressional intent evolved in the post-1974 period. In the Defense Department the term mission was closely associated with weapon systems with the result being the channeling of 'mission-related actions' into the acquisition community and the narrowing of scope to the RDT&E and procurement appropriations. Mission budgeting thus tended to become identified with partial costs vis-a-vis total costs.[16]

The bureaucratic language of appropriations took on the classic air of big business by referring to funding lines as being either investments or operations. Investment appropriations almost exclusively involved the application of money toward the acquisition of new technology and equipment. Operation appropriations involved paying for the cost of on-hand equipment,

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people, operations, and training. The final irony was played out when within the lexicon of appropriations you "invested" in equipment and technology and "operated" people.

This methodology served to promote the machine nexus in two ways. First, by establishing separate funding lines for the individual components of capability, the system attributed capability status to all elements, thus facilitating the placing of them in competition, with the most cost effective being the winner. Second, by separating "investment" costs of equipment from "operations" cost, the system gave equipment and technology "capability" a cost-effectiveness edge when competing against the other "capabilities"—people, organization, and training. The collective effect of the congressional appropriations methodology was to build a Tower of Babel within which capabilities were discussed with a twisted vocabulary, slanted spreadsheets, and a machine bias.[17]

Eisenhower's championing of the nuclear silver bullet established the paradigm that technology was equally effective across the spectrum of conflict. McNamara's PPBS divided capability into its components, defining them individually as being capabilities in and of themselves. The congressional appropriations methodology formalized the comparison of the components as competitors for resources, giving the cost-effectiveness edge to technology through the diffusion of its costs into a variety of funding categories. These actions in combination have evolved into a defense requirements determination system that through its institutionalized rules, procedures, processes, and vocabulary, force any discussion on capability options to focus eventually on a technology solution.

This bias has had, and continues to have, a profound influence upon everything that it and its host systems touch. To illustrate this, three major areas in which the nexus has manifested itself will be discussed: doctrine, force management, and resourcing.

CLIFF TOOLEY

THE SYSTEM BIAS: MANIFESTATIONS IN DOCTRINE, STRATEGY, AND VISION

[Dien Bien Phu] would be the set-piece battle the French had wanted for some time; . . . the French would finally be able to use their superior weaponry . . . it would be, the French thought, men against boys, professionals against amateurs . . . in a way the very concept was a study in Western arrogance.

David Halberstam, *The Fifties*

Doctrine is the set of fundamental principles by which our Armed Forces guide their actions in support of national objectives. Strategy is the description of the role to be played by our military forces in helping to achieve those national objectives. Vision is the Armed Forces' self-perception of the form that those roles and principles will assume in the future. Doctrine, strategy, and vision together are the conceptual basis for force design and management. Defining the nature of this military canonical trinity is the term "evolutionary," for it and its components are direct descendants of Cold War ancestors,[18] perpetuating the centrality of the machine nexus in the military capability ethos.

The Cold War strategy of containment generated a doctrinal structure that was understandably focused on the threat to be contained. Over time, that doctrine underwent several evolutionary (not revolutionary) revisions. A synopsis of those revisions extracted from the Army's current keystone publication reads:

> 1976—Active Defense, caused by the emergence of a new order of weapon lethality revealed in the Arab-Israeli War of 1973; set as its priority the defense of NATO Europe against a quantitatively superior Warsaw Pact; accepted force ratios as a primary determinant of battle outcomes and argued the virtues of armored warfare and the combined arms team.
> 1982—AirLand Battle, caused by rising defense budgets and a stronger recognition of the possibility of worldwide commitment of Army forces combined with an appreciation of operational depth and maneuver.

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1986—AirLand Battle "revised," caused by ability to see deep translated into recognition of the need to fight deep; emphasized operational art.

1993—AirLand Battle "evolved," caused by end of Cold War and change in the nature of the threat; increased the incidence of combined operations; recognized that Army forces operate across the range of military operations.[19]

The last of these revisions (the current keystone document) with its advertised recognition of the range of military operations, devotes 73 pages to the conduct of Major Regional Contingency-type operations while allocating eight pages to the balance of the spectrum of conflict.   This skewed view is mirrored in the philosophical approach to translating doctrine into force structure as exemplified by a recent *Army Times* article:

> The Army has up to now successfully fought off suggestions that it establish units designed specifically for peacekeeping. The Army believes there is more efficiency and less risk in keeping all its tactical units trained for war, but then using them in operations other than war with a little retraining, rather than creating special peacekeeping units that would need substantial retraining and re-equipping before they could be deployed to fight.[20]

"Peacekeeping" appears in this article as a belittling, nonwarrior term encompassing all operations other than the MRC-level conflict. It subtly links the nexus-defining terms "design" and "equipping." It refers to people merely in terms of having to be "trained" or "retrained." The underlying thought is that the "people-ing" of forces is relevant only in terms of their relationship to the equipment.

This belief reflects the bias contained in *The National Military Strategy* as exemplified by its statement that "the core requirement of our strategy . . . is a force capable of fighting and winning two major regional conflicts simultaneously . . . while this requirement *most challenges the force structure*, other needs . . . have also been taken into account" [italics added].[21] If the simultaneous fighting

and winning of two MRCs is the greatest challenge to our force structure and we currently possess the "capability" to meet that requirement, why is the people component of capability excessively stressed today in the absence of a MRC conflict? The answer is the overselling of technology.

The National Security Strategy lays forth that "balanced U.S. forces are needed in order to provide a wide range of complementary capabilities . . . integral to these efforts is the development of new systems and capabilities, incorporating state-of-the-art technology and new and more effective combat organizations."[22] Imbedded within this statement are subtle machine nexus cause-and-effect concepts: "new systems and capabilities," "state-of-the-art technology and effective organizations." The problem with this approach, or strategy, is that the logical extension is that as technology becomes increasingly better, people become increasingly irrelevant. You can do more and better with less if the capability touchstone is technology.

Once this tenet is established, then the validity of its effectiveness and applicability across the spectrum of conflict becomes arguable. Table 1 , extracted from *Army Vision 2010*,[23] is an example of this prima facie attribution of capability. The table is intended to illustrate the spectrum coverage that particular types of forces provide. Critical to its comprehension is the understanding that the type-forces listed were organized, manned, equipped, and trained for the mission category "Defending or Liberating Territory." These same forces are then considered to possess the "capability" to meet the requirements of all other mission categories with "limited train-up." Let's consider the practical ability of this line of reasoning.

As an example, this table simplistically suggests that Special Operations Forces (SOF) are capable of fulfilling a large regional conflict (LRC) or counterterrorism requirement. To actually provide the practical ability to meet the LRC mission, separate SOF organizations are trained with a particular focus on specific regions in the world. For counterterrorism, a specific, highly trained SOF counterterrorist organization exists. In other words, to achieve

"practical ability," SOF units must be specialized, primarily in the areas of people and their training.

TABLE 1: ARMY VISION 2010 FULL SPECTRUM CAPABILITIES

Missions	*Required Army Capabilities*
Defending or Liberating Territory	
MRC	HVY/LT/SOF
LRC	HVY/LT/SOF
Punitive Intrusion	
Counterdrug	LT/SOF
Counterterrorism	LT/SOF
Counterproliferation	SOF
Conflict Containment	
MOOTW	HVY/LT/SOF
Leverage	
TMD	TECH
Space Applications	TECH
C⁴I Systems Integration	TECH
Battlefield Awareness	TECH
Reassurance	
Presence	HVY/LT/SOF
Core Security	
NMD (WMD?)	TECH
Counter Drug	SOF
Illegal Immigration	LT/SOF
Crime in the Streets	LT/SOF
Humanitarian	
Disaster Relief	LT
Population Evacuation	LT/SOF
Refugee Protection	LT/SOF

This potentially misleading table is an example of understating the cost of providing required capabilities through the use of simplistic constructs. It illustrates how "capability" has evolved into a term that has as little or as much relevance someone wishes to attribute to it. In the case of SOF, it is not an issue. Major national

embarrassments caused by real-world operational failures of SOF doctrine and design forced Congress and the Department of Defense to shift the paradigm upon which it was based.

In this shift of the SOF paradigm, the improvement of the equipment component continued to receive attention, but the improvement of the people and training components was brought back into balance with that of the equipment. The bureaucracy has now established the vector-based nexus as the basis of SOF capability. For the Army, Air Force, and Navy, however, the old machine nexus base still applies.

The Air Force's and Navy's doctrine and structure are rightfully based upon this equipment connection. Their roles are to operate in environments that are not the natural habitats of humans; they derive their practical abilities to do so from machines. The Army's role, on the other hand, is to operate within the historical environs of man; it derives its practical abilities to do so from people. The system, however, governs it by the same rules that it does the other two services, creating for the Army a conflict between roles and rules. This conflict places the Army in the position of being people based but equipment justified, a dichotomous state that generates continuous disconnects between stated doctrinal requirements and stated resource priorities. An ongoing example of this is found in the area of training.

In public statements of strategy-derived training requirements, the machine nexus-forced position is that Army forces prepared for "war" can accomplish any other mission assigned with minimum effort. These statements are in conflict with the Army's doctrinal demands that establish the canon that only through the conscious narrowing and focusing of training tasks can units be prepared to effectively respond to requirements. The Army says that combat readiness requires focused, sustained training on specific requirements; it also says that if you train for one conflict you are ready for any other. This dichotomy is not something new. An Army Research Institute study on the determinants of effective unit performance discerned this conflict between public statements and private realities and warned:

The traditional "can do" attitude which is courageous on the battlefield may defeat . . . efforts to secure and defend necessary . . . resources during peacetime. As demonstrated by earlier Congressional pressures to defend . . . budgets, future . . . budgets will come under increasing pressures. Emotional pleas to do what is right or to trust command judgment on resource requirements cannot be expected to win. Instead, hard data showing the resources required to achieve and maintain proficiency on valid military tasks offer the best hope for successfully defending . . . budgets.[24]

Operational examples of the price to be paid for this dichotomy are numerous with the most telling of them, perhaps, being the Vietnam War. In this case, the United States committed its industrial nation style force into an agrarian conflict confident that the enemy was a second-rate adversary because of its technology-poor strategy and force structure. The resulting debacle led to the virtual emasculation of the U.S. military and the fracturing of American society. Jeffrey Davidson captured the paradoxical nature of this conflict:

The real question in the postwar debate over strategies pursued and not pursued in Vietnam, was not what was the proper strategy to guide the ground war in South Vietnam, but what kind of war was the United States fighting in Vietnam at any given period.[25]

Vietnam provided a fundamental lesson on the price to be paid for failing to understand the biases through which requirements are viewed. In the case of Vietnam, agrarian nation-style conflict proved to be decidedly different than its industrial cousin (prepared for war in Europe did not equal prepared for war in a Third World country). Capability proved to be a term best defined in terms of a practical versus theoretical ability to fulfill the requirements of a particular type of conflict (superior technology neither deterred the conflict nor prove effective in winning it once deterrence failed).[26] The term "war" itself proved to be best defined in terms of the

intensity of commitment versus the sophistication of equipment.[27] Borrowing from Halberstam's observation of the French experience in the same environment,[28] the U.S. belief that its technologically superior force was capable of dominating the agrarian-type conflict found in Vietnam was but another "study in Western arrogance"; in agrarian conflict capability, the United States was not a peer of Vietnam.

"Western arrogance" continues to this day because it is a defining characteristic of our national psyche, one that demands the exaltment of technology. This characteristic is not something new; on the contrary, it was observed as early as the 1830s, when Alexis de Tocqueville noted:

> Every new method which leads by a shorter road to wealth, every machine which spares labor, every instrument which diminishes the cost of production, every discovery which facilitates pleasures or augments them, seems to be the grandest effort of the human intellect.[29]

Viewing the world through the kaleidoscope of technology, today's canonical triad of doctrine, strategy, and vision continues to reflect the technology colored bias of its threat-based ancestor. When faced with dichotomies between roles and rules as in the Army's case, it attempts to explain the unexplainable with catchy but meaningless phrases, like "modality of agility." It argues in almost a split-personality manner that technology is the solution but people are the need. It forgets that historically, "Weapons are an important factor in war, but not the decisive one; it is man and not materials that counts"[30]—a truth revisited every time a technology-based nation confronts a determined foe from the agrarian world.

THE SYSTEM BIAS: MANIFESTATIONS IN FORCE MANAGEMENT AND RESOURCING

We are largely administrators of granted resources as opposed to being managers of derived and prioritized needs.

Wayne Allen, Comptroller of the Army, 1981

Force management is the method by which the trinity of strategy, doctrine, and vision is translated into capabilities. Resourcing is the method by which those capabilities are brought to life. Theoretically, force management is a multidimensional, holistic method (or approach) to molding the means to fit the end; that is, it supposedly takes an unbiased look at the requirements of the world and translates them into required capabilities. Resourcing is the method by which strategy, doctrine, and capabilities are harmonized and correlated by employing the filter of priorities. It, too, espouses a fundamental claim to neutrality in judgment. Both force management and resourcing, however, are victims of the machine-nexus bias.

The Army Force Management System encompasses the functional areas of: battlefield requirements determination, research and development, force development, resourcing, acquisition, and fielding. Central to this system are two major points of decision: the identification of solutions to requirements, and the translation of solutions into programs.

Identification of solutions is accomplished through TRADOC's Enhanced Concept Based Requirements System (ECBRS), a decisionmaking methodology used to identify and prioritize Army warfighting needs. Based upon four pillars—Army missions, historical perspectives, threat analysis, and technological forecasts[31]—ECBRS historically began its decision process with the *threat*.

Since the demise of the Warsaw Pact, threat analysis has been focused on Illustrative Planning Scenarios (IPSs) derived from DOD's Defense Planning Guidance (DPG). These IPSs cover the spectrum of possible military actions. However, the IPS known as the "two near simultaneous Major Regional Contingencies" replaced

the defunct Soviet/Warsaw Pact threat as the dominant factor in requirements determination.

ECBRS defines battlefield requirements holistically in five domains: new materiel, reorganization, new doctrine, training, and leader development.[32] Of these, only two—new materiel and reorganization—pass their outputs on along the critical path of force development.

The new materiel and reorganization domains together produce two major outputs: the mission needs statement (MNS) and the operational requirements document (ORD). The MNS is a requirements document that outlines deficiencies in current capabilities and identifies required capabilities, in broad operational terms, which can only be satisfied by a materiel solution.[33] The ORD contains performance (operational effectiveness and suitability) and related operational parameters for a proposed concept or system. Thus the products of the first step of force management are "required capabilities" defined by "materiel solutions" with their "related operational parameters." The process directed toward identifying solutions is thus biased in three significant ways:

- It narrows the requirements up front to that of the MRC IPS.
- It promotes the materiel portion of its solutions to those requirements.
- It downplays the people and training portions of those solutions by shunting them into secondary systems.

The combined effect is the termination of the holistic approach in the very first phase of problem solving.

After these biased, required capabilities are run through the research and development and force development phases they end up in Planning, Programming and Budgeting Execution System (PPBES), where the second major decision point is found: translation of requirements into programs, the sum of which is known as The Army Plan (TAP). TAP translates requirements into programs through the integration of two major inputs: the Total Army

Analysis (TAA); and the Research, Development, and Acquisition Plan (RDAP).

TAA, a computer-aided process used to determine total force requirements, draws guidance from TAP and other sources and generates requirements for manpower and equipment. TAA helps to first assess force capabilities and then to determine, verify, and justify Army requirements. For each program year, TAA develops a force program that meets projected mission requirements within expected end strength and equipment levels.

RDAP is a 15-year plan for the development and production of technologies and materiel to support Army modernization. It develops a research, development, and acquisition program that will maximize warfighting capabilities within limited resources. Two products emerge from the RDAP process. One is TRADOC's Warfighting Lens Analysis (WFLA); the other, a corresponding Science and Infrastructure Support Analysis (SISA). Prioritizing materiel solutions and optimizing dollars spent on modernization programs, WFLA and SISA provide the analytical underpinning for the Army Long Range Research, Development, and Acquisition Plan (LRRDAP).

Thus, the inputs to PPBES in support of its critical task of converting requirements into programs consist of:

- The TAA computer-generated force programs based upon the "required capabilities" defined by "materiel solutions" with their "related operational parameters" provided by the preceding force development phase
- The prioritized and cost-optimized materiel solutions provided by the RDAP process. The so-called holistic approach to force management in reality is in reality a biased methodology of proving the worth of technology.

In no area is there a greater manifestation of the machine-nexus bias than that found in resourcing. The resourcing methodology employed within the defense structure today firmly establishes the primacy of the machine nexus and its MRC/threat-based paradigm.

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Mechanisms like the training reserve model (TRM), operating tempo (OPTEMPO), and Department of the Army Master Priority List (DAMPL) add the final, confusing element to the apples and oranges comparison debate over capabilities. To illustrate the extent of the bias, a brief discussion of the key features of each of the three resourcing mechanisms listed above is necessary.

TRM is a Department of the Army programming method to define and defend unit operating costs. TRM is based on current Combined Arms Training Strategies (CATS) plus other unit operating needs.[34] Developed by the Army Training and Doctrine Command, CATS define training templates for specific types of units to provide for a standardized approach to preparing for an MRC-type conflict. These CATS-derived models are known collectively as Battalion Level Training Models (BLTM).

BLTMs contain unique training strategies (to include the frequency and duration of execution of the component training events) from which required miles and hours of equipment operations are determined. TRM converts training events into miles per hours of equipment usage, commonly referred to OPTEMPO.

Like steaming days and flying hours of the other services, OPTEMPO is a Department of Army programming tool that links money allocations for operations and maintenance to estimates on the cost of operating pieces of equipment in combat organizations. Ninety-four percent of the total force is covered by OPTEMPO (not, however, Special Operating Forces or the training base).[35]

OPTEMPO is subdivided into two parts: direct and indirect. Direct OPTEMPO funds the cost of actually operating the item of equipment. It is a variable amount based upon the modeled training strategy requirement and historical data. Indirect OPTEMPO funds the ancillary costs of operating the equipment; in other words, the costs of having people operate the equipment. Table 2 shows the subcategories of direct and indirect OPTEMPO for a typical ground combat unit.[36]

While OPTEMPO defines the training monies required to operate the equipment in meeting the needs of the BLTMs, the DAMPL establishes the priority by which those monies will be

actually handed out. DAMPL is a prioritized list of all claimants for Army resources. Prioritization, for the most part, is linked to the commitment timing of organizations in support of MRC warplans. DAMPL is the method of applying fiscal constraints upon operations and maintenance (and other resourcing activities like personnel distribution) expenditures.

TABLE 2: EXAMPLE DIRECT AND INDIRECT OPTEMPO COST CATEGORIES

Direct OPTEMPO Costs	*Indirect OPTEMPO Costs*	
Consumables	Class II & IV supplies	Other contractual Services
Equipment scaling	Contractual services (ADP)	Other unit costs
FSC	Medical supplies	Travel (general)
POL	NBC supplies & equipment	Travel (TRADOC Schools)
Reparables	Organizational clothing & equipment	ASIF charges
	Troop schools (DA approved)	Communication batteries
	Aviation maintenance services	Army learning center
	All source analysis System	Army personnel testing
	Digital TOPO support system	Army daily mechanical report (travel)

Like force management, for resourcing the start point is the threat. Against that threat is arrayed a force structure designed for that specific piece of the conflict spectrum. For each of the unique force structure entities, a training model is developed targeted to prepare the entity for success in the MRC. Central to those training models is the training associated with the principal pieces of

technology and equipment around which the unit is designed. Those pieces of equipment are treated as the cost drivers because they are the "key" element of the unit's capability. Monies are allocated based on the number of hours or miles those pieces of equipment are operated in order to train for the MRC conflict. Those monies are adjusted (mostly downward) based on the individual unit's priority of commitment to the MRC with earliest deploying units being the highest resourced.

Theoretically, OPTEMPO is a Department of the Army Headquarters programming tool, not a unit level execution/ reporting tool. It is suppose to be just a method of allocating money, not a locked in concrete determination of how a unit will spend its money. However, in reality, it becomes a hard benchmark against which units are measured, as evidenced by this GAO report to Congress:

> Congress fully funded the Army's request for OPTEMPO requirements on the basis that the funds were needed in order to attain and maintain a ready Army. . . the amount appropriated. . . was more than the Army requested and was more than sufficient to enable the Army to achieve its prescribed readiness levels based on a 800-mile training rate.[37]

While OPTEMPO is supposedly only a programming method, it is used as an accounting tool as well. Department of the Army and Office of the Secretary Defense accounting offices track equipment usage data from every unit. They look at the miles used (in this case 620) versus the stated need of 800 miles and then check the readiness report (in this case it had stayed at the highest level of readiness). The logical machine-nexus question is: "If you are not using the equipment as much as your training model says you should, how can you be ready to go to war?" This is usually followed by an accusation that commanders are diverting the monies to secondary projects and, by implication, trying to hide the diversion by reporting unrealistically high readiness levels.

The bottom line is that the vast majority of real-world operational tasks assigned to units are not related to the MRC-based training models. The majority of these non-MRC requirements place a premium on people, not equipment. The training events, supporting training aids, expended classes of supply, etc., all are markedly different than the funded training models. The machine nexus has caused an accounting method to be implemented that says that 85 percent of OPTEMPO money should be spent on the cost of operating equipment, while the remaining 15 percent is to be spent on everything else (the people cost).[38] The fact is, when preparing for engagement in anything less than a MRC, those percentages are inverted.

Within the area of force management and resourcing, the system predestines the machine nexus for success. Within the framework of force management, it establishes criteria that leads inevitably to a technology solution and then proves it within computer modeling systems that treat people and training as constants and equipment as the variable. On the resourcing side, the system begins with the conclusion that equipment designed primarily for the MRC conflict is the central component of capabilities and people exist only to operate that equipment. Upon that basis, then, it programs and accounts for expenditures, flogging organizations that do not have the political acumen to conceal their real requirements. In the final analysis, the system is a child of the machine nexus and can do nothing more than regenerate its likeness.

TOWARD A CAPABILITIES-BASED PARADIGM

Looking back, I clearly erred by not forcing . . . a knock-down, drag-out debate over the loose assumptions, unasked questions, and thin analysis underlying our military strategy in Vietnam. I had spent twenty years as a manager identifying problems and forcing organizations—often against their will—to think deeply and realistically about alternative courses of action and their consequences. I doubt I will ever fully understand why I did not do so here.

Robert S. McNamara[39]

Senator John McCain has presented the challenge that "we must reshape our strategy, tactics, and force plans to meet a new set of regional contingencies, proliferation, and global competition."[40] To do so will require realistic thinking, a shift in paradigm, and a change in systems.

To achieve an environment in which realistic thinking can occur will require that the disbelief wrought by the workings of institutionalized bias be temporarily suspended. Knowing that for nearly 50 years the bias has been at work influencing everything it has touched, progress can be achieved only by refraining from reaching back into the tar baby for examples. As has been said before, everything must be on the table. To start anew requires the establishment of a new touchstone and a new azimuth of movement.

The start point of change is the expanded CORM definition of capability—"the practical ability of a properly organized, trained, and equipped force to effectively accomplish a particular mission or function." This definition becomes the touchstone of a vector-based nexus for a new capabilities-based paradigm. Within the context of this tenet a new azimuth is defined through the accomplishment of three tasks:

- Look anew at the world order and the nation's place and desired roles within it.
- Define the requirements for military capabilities within that world view.
- Establish the systems that allow the desires and realities to come into balance and the resulting requirements for capabilities to be practical.

The machine-nexus view of the world is that of a continuous range or entire extent of conflict with the most challenging end being that of the MRC. Within the limits of this technology-oriented view is derived the term "spectrum of conflict." With this as the defining world view, there can be no escape from a threat-based

paradigm, for the requirements are seen only as shades of differences from the one, primary threat.

In a different approach, one in which people and technology are brought into balance, the world could be viewed as a collection of smaller worlds, a collection of different outlooks and experiences. This view would promote a picture of a world divided into the haves and haves not.

Dominate within this world are the haves not—those nation-states still rooted primarily in the agrarian past. Smaller in number are the industrial nation-states constituting the primary players in the traditional world scene. Newest upon the scene are the states without borders—the transnational world—made up of international groups and entities that operate legally and illegally across international boundaries. Common to all three worlds because of the relative ease of its attainment, is the informational sector, the conduit of interaction existing in the world of interconnected computers.

FIGURE 2. THE WORLDS OF COMPETITION, CRISIS, AND CONFLICT

Agrarian

Informational

Trans-National

Industrial
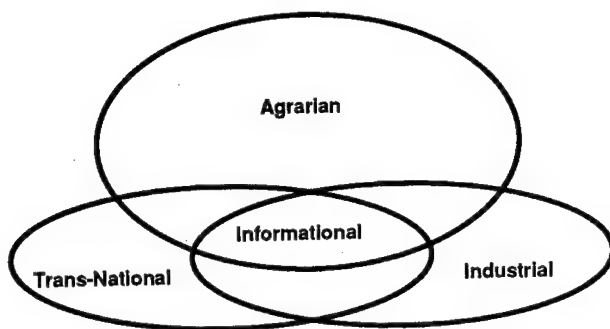
Within this world of worlds, collisions occur in the forms of competition, crisis, and conflict as outlooks and desires clash. Capacity to assume a position of domination is measured in terms of the requirements of the world in which the collision occurs, not by those of the world from which the player comes. The

requirement, then, for a nation that seeks superpower or transworld domination status is to possess the practical ability to dominate in each of the subworlds.

The second task is to define the requirements for military capabilities within this world view. To accomplish this requires constant remembrance that capability consists of three practical ability components: people, equipment, and organization and training. With this in the back of the mind, the choice of design nexus becomes clear.

Historically, the requirements of the agrarian world have predominately been people intensive, while those of the industrial world have been equipment intensive. Therefore, achieving a practical ability within those two spheres requires the application of two different nexus: one people based, the other equipment based. In the relatively uncharted transnational world, there is yet no clear indicator of the appropriate nexus to be used. Viewed from a common vantage point, requirements determination would require a vectored-nexus approach; that is, each world would require unique solutions.

To achieve practical ability within structure, each world would require different mixtures of people and equipment. To achieve practical ability in training would require unique programs focused on specific requirements. To achieve transsphere capability would require each structure to be addressed by both nexus and be equipped for industrial requirements and manned for agrarian requirements. The result would be, from a macroview, a capability-based force as depicted in figure 3.

Finally, to achieve real progress, the systems that balance desires, realities, and practical abilities must be established. To do so requires a system that embodies three major tenets: relational perspectives, managerially meaningful constructs, and practical priorities.

The relational perspectives of capabilities management resemble a pyramid with the view becoming more panoramic and less detailed as the viewer rises towards the apex of management levels. The top of the military capability management pyramid is the

macroview position of entities like Congress and the President. The midview is that of OSD and the Joint Chiefs of Staff. The micro-view is that of the services. Fundamental to the relational perspectives tenet is the understanding by viewers at every level of what they can and should know and manage.
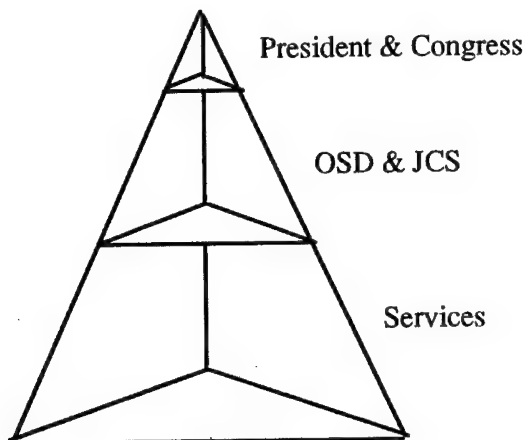

FIGURE 3: THE CAPABILITIES-BASED FORCE

Agrarian

Trans-National

Industrial
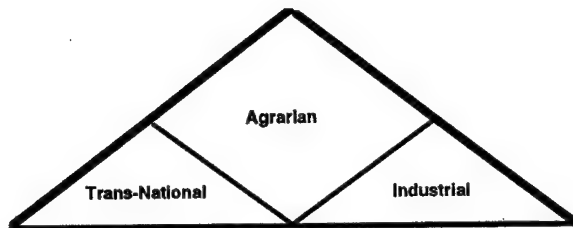
FIGURE 4: THE RELATIONAL PERSPECTIVES OF CAPABILITIES

President & Congress

OSD & JCS

Services

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Relational perspective is made viable through the application throughout the system of managerially meaningful constructs. For a construct to have meaning and usefulness in the realm of management it must be one that describes practical abilities in terms of total costs. In terms of military capabilities, such a construct would encompass the sum total of life cycle costs of each of the components, as illustrated in figure 5.

To contrast this to an example within the current system,[41] instead of Congress managing capabilities through appropriations for components of total costs (personnel, research, operations, etc.) as it does now, it would manage each capability through its unique appropriation. This would allow direct, clear links among requirements, capabilities, priorities, and resourcing. Only through the use of such constructs can actual costs be determined, informed choices be made, and accountability be established.

The final tenet, practical priorities, is applied in concert with managerially meaningful constructs, and relational perspectives. It consists of nothing more than the application of honest, straightforward, common-sense judgment. It addresses the most difficult decision to be made in achieving a capabilities-based force: "Is this the practical ability the Nation needs most from its Armed Forces?"

FIGURE 5: PRACTICAL ABILITY IN A MANAGERIALLY MEANINGFUL CONSTRUCT
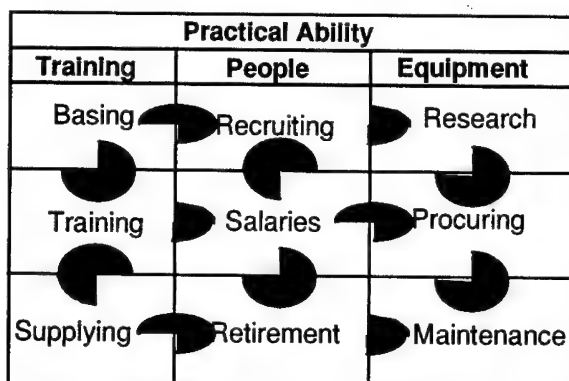
CONCLUSIONS

Strategy, program, and budget are all aspects of the same basic decision.
President Harry S. Truman, 1945

If the Armed Forces of the United States are to possess relevancy in the 21st century, the system that manages them must be changed. The current system, ranging from the congressional appropriations methodology to the service-peculiar force management methodologies, is crippled by the legacy bias of the Cold War era: the threat-based paradigm with its associated machine nexus.

The world of today and tomorrow is strikingly different both in terms of challenges and requirements. Sustainment of relevancy in that new order requires that the nation's military capability management system be rebuilt upon a new paradigm—one that is capabilities based with a balanced view of people, equipment, and training. By shifting the system's worldview and paradigm base, the Armed Forces that it manages will possess a much greater and, in the long run, more economical practical ability to meet the needs of the nation they serve.

NOTES

1. Joint Chiefs of Staff, Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington: U.S. Government Printing Office, 1994), 60.

2. Ibid., 237. The definition goes on to say:

It includes four major components: force structure, modernization, readiness, and sustainability.
a. force structure—numbers, size, and composition of the units that comprise our Defense forces; e.g., divisions, ships, airwings.
b. modernization—technical sophistication of forces, units, weapon systems, and equipments.
c. readiness—the ability of forces, units, weapon systems, or equipments to deliver the outputs for which they were designed (includes the ability to deploy and employ without unacceptable delays).

d. sustainability—the ability to maintain the necessary level and duration of operational activity to achieve military objectives. Sustainability is a function of providing for and maintaining those levels of ready forces, materiel, and consumables necessary to support military effort."

3. *Joint Vision 2010* (Washington: Joint Chiefs of Staff, 1996), 2. Full spectrum dominance is subsequently described as being "the range of military operations."

4. Ibid., 34.

5. John P. White, *Directions for Defense: Report of the Commission on Roles and Missions of the Armed Forces* (Washington: Department of Defense, Commission on Roles and Missions of the Armed Forces, 1994), Glossary 3.

6. David Halberstam, *The Fifties* (New York: Villard Books, 1993), 397.

7. Ibid., 396.

8. Ibid.

9. Richard L. Williams, James D. Blundell, Sandra J. Daugherty, George E. Ehling, Lori J. Johnston, and Leslie A. Ballard, *Planning, Programing, Budgeting, and Execution (PPBES) Handbook* (Washington: Program Analysis and Evaluation Directorate, 1982), xxv.

10. Patrick M. Roddy, *Planning, Programing & Budgeting System: An Executive Primer* (Washington: Office of the Director, Program Analysis and Evaluation Directorate, undated), 1.

11. Williams et al., 1-2.

12. *Towards PPBS II: Mission Budgeting—Notions on Improving the Managing of Resources* (Washington: Office of the Comptroller of the Army, Department of the Army, 1981), 25. In this document, the then-Comptroller of the Army, Wayne Allen, made the observation, "To be sure, the current PPBS is highly structured and fully computerized and, when the forms are completed properly, runs with an accounting preciseness that is said to be the envy of other government agencies. However, there is an anonymous, thought-provoking passage that makes the rounds from time-to-time and which deserves pondering—We may have in the current PPBS the most detailed, finely tuned, computerized financial tracking system possible. It may also prove to be treasonous."

13. C. J. Hitch and R. N. McKean, *The Economics of Defense in the Nuclear Age* (Boston: Harvard University Press, 1961), 53.

THE MACHINE NEXUS

14. *Towards PPBS II: Mission Budgeting*, iii. In pages 8 through 9, this document gives a detailed description of the Congressional attempt to gain control of the "money versus capabilities" visibility dilemma by presenting a brief survey of congressional acts during the period 1949 to 1974. It shows that even as Congress was attempting to add meaning to the money spent, it was building a structure that separated the components of capability while simultaneously establishing equipment as the leading element in capabilities determination. Key congressional actions in this regard include:

- 1949 PL 81-216, Section 403, Title IV, authorized DOD to prescribe the form of its budget, subject to presidential approval, provided that it complies with requirements contained elsewhere. Specifically, the section stated that the budget will contain . . . the cost of performance of readily identifiable functional programs and activities with segregation of operating and capital programs.
- 1950 PL 81-784, Budgeting and Accounting Procedures Act of 1950, established a model financial management system for all Federal departments and agencies. Basically, the model called for performance budgeting based upon accrual accounting. It required departments and agencies to establish such systems. Performance budgeting required accrual accounting to be meaningful but accrual accounting systems have not been established.
- 1959 PL 86-149, Section 412(b), required congressional authorization of appropriations for the procurement of aircraft, missiles, and naval vessels.
- 1962 PL 86-436 required congressional authorization of appropriations for research, development, test and evaluation associated with aircraft, missiles, and naval vessels.
- 1964 PL 88-174 required authorization of appropriations for all RDT&E carried on by the DOD.
- 1965 PL 89-37 required authorization of appropriation for procurement of tracked combat vehicles.
- 1967 PL 90-168 required annual authorization of the personnel strengths of each of the Selected Reserves of the Reserve Components.
- 1969 PL 91-121 required authorization of appropriations for procurement of other weapons (essentially heavy, medium, and

light artillery, anti-aircraft, rifles, machine guns, mortars, small arms weapons, and any crew-fired piece using fixed ammunition).

- 1970 PL 91-441 required authorization of appropriations for procurement of torpedoes and related support equipment; and to require authorization by Congress of average annual active duty personnel strength for each component of the Armed Forces. (Subsequently amended by PL 92-436 to substitute an annual "end strength for active duty personnel" requirement in lieu of an "average annual active duty personnel strength.")
- 1972 PL 92-436 required authorization of the average military training student loads for each component of the Armed Forces for specified individual training categories of recruit and specialized training, flight training, professional training in military and civilian institutions and officer acquisition training.
- 1973 PL 93-155 required authorization of the "end strength for civilian employees for each component of the DOD for each year."

15. Ibid., 5-6. "In 1974, PL 93-344, The Congressional Budget Act (CBA), provided in Section 601 of Title VI the following: "(i) The Budget transmitted pursuant to subsection (a) for each fiscal year, beginning with the fiscal year ending September 30, 1979, shall contain a presentation of budget authority, proposed budget authority, outlays, and descriptive information in terms of (1) a detailed structure of National needs which shall be used to reference all agency missions and programs, (2) agency missions; and (3) basic programs."

16. Ibid., 6.

17. This point is addressed extensively in *Towards PPBS II*. One example is found on page 11: "Obfuscation is most readily seen and understood when trying to find the total cost of weapons programs in the PPBS. Currently, one can find, at best, research, development, testing, and evaluation and procurement funded costs associated with systems. Personnel and Operations and Maintenance costs are generally not visible by system."

18. John M. Shalikashvili, *National Military Strategy of the United States of America* (Washington: Joint Chiefs of Staff, 1995), 20. "This national military strategy builds on its predecessors and continues the evolution from the strategies developed during the Cold War. Despite the breakup of the Soviet Union and the subsequent drawdown of U.S. forces, this is a strategy of continued global engagement."

19. Department of the Army Field Manual 100-5, *Operations* (Fort Monroe, VA: U.S. Army Training and Doctrine Command, 1993), v.

20. Sean D. Naylor, "Two Wars, Two Opinions," *Army Times*, January 20, 1997, 3.

21. Shalikashvili, iii.

22. The White House, *A National Security Strategy of Engagement and Enlargement* (Washington: U.S. Government Printing Office, 1996), 14.

23. *Army Vision 2010* (Washington: Department of the Army, 1997).

24. Robert F. Holz, Jack H. Miller, and Howard H. McFann, *Determinants of Effective Unit Performance: Research on Measuring and Managing Unit Training Readiness* (Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 1994), 300.

25. Jeffrey Davidson, *Vietnam at War, The History 1946-1975* (Novato, CA: Presidio Press, 1988), 320.

26. Halberstam, 409, says in relation to the deterrence value of high tech systems: "In Indochina (one of the three places where Dulles had apparently rescued the peace—the other two were in Korea and the Island of Quemoy), he had succeeded by sending two aircraft carriers steaming into the South China Sea. It was, he noted, 'a modern version of the classical show of force designed to deter any . . . attack against Indochina, and to provide weapons for instant retaliation.' In fact, the aircraft carriers had been a bluff that did not work and had absolutely no effect on the Vietminh."

27. Jeffrey Record says: "A more satisfying if perplexing conclusion is that the war was, at one time or another, all of the above: limited (for the United States), total (for North Vietnam and the National Liberation Front), civil (at stake was the future political control of South Vietnam), international (the war elicited massive direct U.S. and indirect Soviet and Chinese intervention), conventional (for the United States and its South Vietnamese ally from 1965 on, and increasingly, after the Tet Offensive, for the North Vietnamese), guerrilla (largely for both North Vietnam and the NLF before the Tet Offensive), and revolutionary (the Communist side sought not only national reunification but also imposition on the South of a revolutionary social order)." "Vietnam in Retrospect: Could We Have Won?" *Parameters* 26, no. 4 (Winter 1996-1997): 51-65,

28. Halberstam, 409.

29. Alexis de Tocqueville, *Democracy in America*, ed. and abridged by Richard D. Heffner (New York: Penguin Books, 1956), 167.

30. Mao Tse-tung, *Problems of War and Strategy*, 1938.

31. Department of the Army, TRADOC Regulation 11-15, *Concept Based Requirements System* (Fort Monroe, VA: U.S. Army Training and Doctrine Command, 1989), 1-7.

32. Ibid., 9.

33. Ibid.

34. Department of the Army, "OPTEMPO/OPREP," briefing by DAMO-TR, Office of the Army Deputy Chief of Staff for Operations. Author's Note: TRADOC Pamphlet 350-10, *Combined Arms Training Strategy Development* (Fort Monroe, VA: Headquarters, U.S. Army Training and Doctrine Command, 1993), 2, describes Combined Arms Training Strategy (CATS) as being "the Army's overarching strategy for the current and future training of the force. It describes how the Army will train and sustain the total force to standard in the institution, unit, and through self-development, to support the post cold war Force Projection Army. CATS also identifies, quantifies, and justifies the training resources required to execute the training. This includes ensuring that relevant practice fields which replicate the battlefield with great fidelity are available to the Force Projection Army. Practice fields are training locations with the resources necessary to support training on specific collective missions (i.e., NTC, JRTC, JOTC). Combined Arms Training Strategy (CATS) categories are two distinct categories of strategies affecting different time frames upon which CATS focus. These include:

• Current strategies for institutions, units and self-development are baseline strategies which describe how the Army trains now. Current strategies are based on current threat/capability requirements, mission, doctrine, organization, and training resources (OPTEMPO, ammunition, training land, ranges, facilities, and TADSS). Current strategies apply to the budget and execution years of the budget process.

• Future strategies reflect changes in threat, technology, budget, force capabilities, and mission in the years to come. Future strategies also forecast changes in the mix and type of training resources needed to execute future training, ensuring that the Army has a sound acquisition plan for obtaining these training resources. Future strategies are normally developed from the POM period to at least 10 years into the future (i.e., through the second year of the extended planning period (EPP) of the budget process)."

35. Ibid.

36. Ibid.

37. *Briefing Report to Congressional Committees, 1995 Budget—Potential Reductions to the Operation and Maintenance Programs*, GAO/NSIAD-94-246BR (Washington: U.S. General Accounting Office, National Security and International Affairs Division, 1994), 7.

38. John Phillips, Comptroller of the 101st Airborne Divisions (Air Assault), interview with author, spring 1996.

39. Robert S. McNamara, *In Retrospect: The Tragedy and Lessons of Vietnam* (New York: Times Books, 1995).

40. John McCain, *Ready Tomorrow: Defending American Interests in the 21st Century* (Washington: U.S. Senate, 1996), 1.

41. *Briefing Report to Congressional Committees*, 16. Current constructs have been rendered so meaningless that they have become an obstacle (or perhaps shield) against accountability, as evidenced in this statement in the GAO report: "To evaluate how the services are using their Operation and Maintenance funds, we asked them to provide us with their budget requests, appropriations, and obligations by program element code for fiscal years 1993 through 1995. The Navy was unable to provide any information at the program element level. As a result, we did not include the Navy in our analysis. Also, the Army and the Air Force were unable to provide appropriation data by program element code because neither service allots the appropriation below the subactivity level."